

This is Gemini Launch Control. The Gemini 11 mission was postponed early today when a small leak was detected in the first stage oxidizer tank during checks of the Gemini Titan Two launch vehicle. The leak was discovered during regular checks of the vehicle following completion of the propellant loading during the early part of this morning's countdown. Both stages of the Titan Two use Aerozine 50 fuel, a combination of unsymmetrical di-methyl hydrazine and hydrazine, and nitrogen tetroxide as the oxidizer. A total of some 31,900 gallons of propellants. The leak was discovered on the outer skin of the first stage, on a weld seam some five feet below the top of the oxidizer tank. Project officials said it would require some six hours to empty the launch vehicle propellants and determine the extent of the problem and its effects on the launch schedule. This will be about 9 a.m. Eastern Standard Time this morning. As soon as the determination is made on the recycle, which will be at least 24 hours, an announcement will be made. This is the Gemini News Center.

This is Gemini Launch Control. We're T-264 minutes / and counting.
and
T-264 / counting, and right on time in our countdown at the present time, aiming toward our dual launching of the Gemini 11 mission. We have just completed / at launch complex 14, the propellant loading of the Agena stage. We completed that about 6 or 7 minutes ago. Following this propellant loading, that is, loading the fuel aboard the Agena, the hydrazine fuel. Our next step about 20 minutes from this time, will be to start to roll the gantry service structure back at the pad to continue the count. It's expected that perhaps just about this time, on a matter of a minute or so, the planned pilots for the mission, astronauts Pete Conrad and Dick Gordon will be awakened at their crew quarters at the Kennedy Space Center, Merrit Island. The backups for the mission, Neil Armstrong and Bill Anders have been up in the white room, the 100 ft. level at launch complex 19, aboard the Gemini Spacecraft for about 2 hours at this point. Our countdown the overall countdown now has been in progress for about 7 hrs., starting shortly after 10 a.m. EST last evening. All is going well, despite the fact that we have had driveing rain storms here at the Cape over the last hour or so. The weatherman still is giving us a prediction of exceptible weather for this mornings launch at 10. The forecast only calls for partly cloudy, conditions in the Cape area, winds from the northeast at about 12 knots, a sea state of 3 to 4 ft. and a temperature of about 82 degrees. Despite the driving rain storm that we have had out here over the last several hours, it has had little or no effect on our countdown operations. It has not caused any delays nor any problems. That generally is the picture at this point, coming

up on T-262 minutes in counting and preceding. This is Gemini Launch
Control

END OF TAPE

his is Gemini launch control T-254 minutes 55 seconds and counting. We now have confirmation that about 9 minutes ago or at 4:59 a.m. eastern standard time the two pilots for the mission, astronauts "Pete" Conrad and Dick Gordon were awakened at their crew quarters in Merritt Island. They are now up. They'll be starting their quick physical examination shortly which will be followed by breakfast at the crew quarters at KSC and a little later in the countdown they will be coming down to the ready room at launch complex 16 to don their space suits. From here on in they are a part of the countdown. They were awakened right at the proper time in the countdown at the T-260 minute mark or 4:59 a.m. eastern standard time. One point of interest it was reported that astronaut "Pete" Conrad had requested to be awakened at 5 a.m., that is one minute later, so that he could have said that he slept late on launch day. However, he was awakened along with Dick Gordon at 4:59 right on the nose as planned. To repeat, both pilots for the mission are now up. Their backups are still in the spacecraft, astronauts Neil Armstrong and Bill Anders making the preliminary checks on the Gemini 11 spacecraft. They have been in the spacecraft now for about 2 hours and 15 minutes or so. All still going well. We just received an update on weather as far as launch time is concerned, and the weatherman despite some severe rainstorms that we have had here about this time this morning, is predicting broken clouds for the Cape area at launch time. Broken clouds at about twelve thousand feet, a visibility of ten miles, surface winds 10 knots from the northeast and a seastate of three feet. Weather around the rest of the world track will be acceptable for launch attempt this morning. In the event that as we approach the Atlas Agena liftoff time which is 7:48 a.m. EST and did have some rain at that time, in all probability we still would be able to launch. The guide rules would be rain safety minimums would be observed, that is that the

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various radars tracking the mission would have to be able to receive signals from the launch vehicle. As long as there would be no interference in the rain safety manner, it is expected that we would be able to launch despite the fact that there could be some rain in the area. The weatherman at this point is still standing by his prediction of broken clouds at about twelve thousand feet at launch time. This is Gemini launch control.

END OF TAPE

This is Gemini Launch Control, T-230 minutes and counting. T-230, all still going very well with our countdown for the Gemini 11 mission. This count has now been in progress for some 7-1/2 hours since it picked up with the main countdown last evening, and we have no problems at this time, all has gone well. In a matter of about 15 minutes ago, the final major participant in the, this very complex countdown joined the count, that was the Gemini Launch Vehicle which came in at the T-240 minute mark. We now have some 9 countdowns going on simultaneously and all going well at this point. Astronauts Pete Conrad and Dick Gordon should just about finished up their physical examinations and will be coming back down the hall at the Crew Quarters, Kennedy Space Center, Merritt Island, and they will be sitting down at breakfast shortly. We expect to get confirmation of their activities at the Kennedy Space Center also shortly. All other tests are still going well at this time. About 15 minutes ago we began to roll back the Gantry Service Structure at Launch Complex 14 where we have the Atlas/Agena, the first of the two vehicles we will launch this morning. We have already loaded the fuel aboard that Agena stage and once we get the Gantry Service Structure in its fall-back position, once we have it in its locked position, the crew at 14 will then proceed to load the acid oxidizer aboard that stage. At Launch Complex 19, the backup pilots Neil Armstrong and Bill Anders, still aboard the Gemini spacecraft making their preliminary check. They will be ready later in the countdown to give it complete report to the prime pilots of the spacecraft. All systems still going well at T-228 minutes 13 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control, T-220 minutes and counting. All systems going very well in our simultaneous countdown at this time. In a matter of a minute or so, the prime pilots astronauts Pete Conrad and Dick Gordon should be sitting down for breakfast out at the crew quarters at the Kennedy Space Center. We'll have a report on their menu and on the guests they had for breakfast shortly. They have just about completed their physical exams. We hope we will get a report from Doctor Fred Kelley, the examining physician following the completion. Coming up in about ten-minutes at launch complex 14, as we secure the gantry service structure at 14, will be the final propellant loading of that Agena second stage and about a 30-minute time period, we'll load some 10,000 pounds of that ^{acid} oxidizer aboard the Agena to complete the propellant loading of that stage. All other systems going well at this time. At launch complex 19, backup pilots, Neil Armstrong and Bill Anders still aboard the Gemini 11 spacecraft. The Gemini launch vehicle, the propellants were loaded aboard the Gemini launch vehicle in about a 3-hour and 15-minute operation, starting last evening and winding up shortly after midnight this morning EST. We loaded all the propellants aboard both stages of the Gemini launch vehicle, made another check of that leak which we have a patch covering that leak, in the oxidizer tank of the first stage, that caused a postponement of yesterday's launch attempt. The crew took another look at it, and it's standing up very well. We are very satisfied with the fix that was made to that pin-hole leak on the first stage of the Gemini launch vehicle. Our weather situation still remains acceptable for launch. Mr. Ernie Ammons, representative of the spaceflight meteorology group, reports that

we had plenty ^{of} weather ^{on} the world-wide track, but none of it will interfere with the launch attempt this morning. We had some severe rain storms here in the Cape area a little earlier this morning, but it's not expected that that will cause any problem. It has had no effect on our countdown operations thus far. The forecast, broken clouds at launch time of about 12,000 feet. Winds from the northeast at 10 knots, surface winds from the northeast at 10 knots, to repeat. A sea state off the Cape of about 3 feet. We have three tropical storms of interest off of West of Baja, California, they have tropical storms Francesca, Helga and Gretchen. The astronauts probably will fly over the storms at various time in the mission, but they are expected to have no effect on the launch attempt. Now, T-217 minutes and counting. This is Gemini Launch Control.

END OF TAPE

his is Gemini launch control T-210 minutes and counting, T-210 and counting. All still going very well with our Gemini 11 countdown at this point. At launch complex 14 where we have the Atlas Agena located, the first of our two vehicles to launch this morning, the crew has been given a go ahead to start that oxidizer loading of the Agena second stage. That's some ten thousand pounds of acid that we will load aboard the Agena now that we have the service structure in its fall back position. During this period it will take about 30 minutes to load the acid aboard the Agena. All systems still going well also at launch complex 19. The backup pilots Neil Armstrong and Bill Anders still aboard the spacecraft. They expect to leave the spacecraft about twenty minutes from this time. Since we have to clear the launch complex during the pressurization of the Gemini launch vehicle, which is due at one sixty-five in the count. The two backups will return to the spacecraft however after the pressurization and continue their preliminary checks of the various Gemini spacecraft systems. The backups now have been in the spacecraft some three hours at this time. Meanwhile at the Kennedy Space Center crew quarters the prime pilots "Pete" Conrad and Dick Gordon are sitting down for breakfast. They have eight guests for breakfast this morning and we will now give you the list of guests for breakfast at KSC. Dining with the prime pilots are: Donald K. Slayton who is director of flight crew operations for MSC and Alan B. Sheppard who is chief of the astronauts at MSC. Also in attendance are six of the new group of astronauts who were selected on May 1st of this year. There are a total of 19 pilot astronauts selected in the latest group on May 1st. Six of them have been here receiving some briefings and getting familiarized with our Cape operations. The six are also having breakfast with the prime crew. They are as follows:

1st are two civilians Mr. Vance D. Brand, Mr. Fred W. Haise, Lt. Cmdr. Ronald E. Evans, Marine Major Gerald P. Carr, Navy Lt. John S. Bow, Navy Lt. Thomas

K. Mattingly. To repeat those names quickly and those names will be available in news centers both in Houston and here at the Cape. The six new astronauts who are joinning the prime pilots for breakfast Vance D. Brand, Fred W. Haise, Ronald E. Evans, Gerald P. Carr, John S. Bow, and Thomas K. Mattingly. Also dining with the pilots of course are Donald K. Slayton and Alan B. Sheppard. Now coming up on T-206 minutes 43 seconds and counting. This is Gemini launch control.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 9/10/66, 5:03 A.M.

TAPE 7, PAGE 1

This is Gemini Launch Control, T-200 minutes and counting. T-200, all still proceeding very well with our simultaneous countdown for the Gemini 11 mission. The overall countdown now has been in progress some 8 hours. All is still going very well. We're right on time with all the events at this point in the count. At the Kennedy Space Center, Merritt Island, the prime pilots for the mission, Astronauts Pete Conrad and Dick Gordon, now have been up for about an hour. They are sitting down having breakfast at this time with 8 guests at the table. Their menu has been confirmed and it's the usual astronaut's fare of orange juice, fillet mignon, scrambled eggs, toast, and coffee. It's expected that the astronauts will be departing from the Crew's Quarters about 15 minutes from this time. They will go to the Ready Room at Launch Complex 16 where they will don their space suits. In the meantime, at Launch Complex 19, the backup pilots, Neil Armstrong and Bill Anders^{have} now left the spacecraft. They have been aboard the Gemini 11 spacecraft at the 100 foot level at Launch Complex 19 for about three hours. We're now clearing the White Room in anticipation of the pressurization of the Gemini Launch Vehicle which will be coming up in about 20 minutes or so. Following the pressurization of the Launch Vehicle, the 100 foot level, the White Room crew and the backup pilots will return to the White Room to continue their preparation. All is still going very well at this time both at Complex 19, with the Gemini Launch Vehicle and spacecraft, and Complex 14 where we are still loading that acid oxidizer aboard the second stage, the Agena second stage at Complex 14. Now coming up on T-198 minutes and 9 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control, T-187 minutes and counting. T-1 8 7. Just a matter of a minute or so ago, the prime pilots for the mission, astronauts Pete Conrad and Dick Gordon departed from the crew quarters, at the Manned Spacecraft Operations Building, Gemini Space Center, and now are on their way to launch complex 16, the ready room where they will suit up for the mission. They are on their way. They were awakened 1 minute before 5:00 AM this morning, 5:00 AM EST. They then proceeded down the hall for a quick medical checkup by Doctor Fred Kelley of the Manned Spacecraft Center. Doctor Kelley declared them physically fit for the mission. Following the physical, a team breakfast. They had some eight guests with them at breakfast this morning and the usual astronaut menu of orange juice, fillet mignons, scrambled eggs, toast and coffee. At launch complex 19, the crew is just completing the connection of the destruct boxes aboard the Gemini launch vehicle. These are the connectors for the destruct package that would be used to terminate the flight if problems developed during the mission. Meanwhile at launch complex 14, all is still going well as we complete the loading of the acid aboard the Agena second stage. All still going very well with our simultaneous countdown at this time. There have been no holes and there are no problems at this point. T-185 minutes, 30 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini launch control T-175 minutes and counting, T-175. All still going very well with our simultaneous countdown for the Gemini 11 mission. Astronauts "Pete" Conrad and Dick Gordon now have arrived at the ready room at complex 16. This is that trailer facility where they will make their final preparations for the flight before going to launch complex 19 and their Gemini spacecraft which is up at the 100 ft. level, the so-called white room at complex 19. The first event that will occur in the ready room at 16, the prime pilots will get a thorough briefing on the status of the countdown and the overall mission. They will be told that we have had a very good countdown thus far with no problems. That we have completed the propellant loading of the Gemini launch vehicle in about 3 hours and fifteen minutes late last evening finishing up about 45 minutes after midnight this morning EST. The crew then made some checks of that pin hole leak that caused us some problems which caused the postponement of yesterday. The patch, the aluminum patch, and the various fixes that were applied to that pinhole have stood up and the crew is very satisfied with the repair. There is no problem whatsoever with the Gemini launch vehicle or the Atlas Agena here at complex 14 at this time. The backup pilots Neil Armstrong and Bill Anders have cleared the white room. They were in the spacecraft some three hours making the preliminary checks. The white room has been cleared at complex 19 in the anticipation of the pressurization of the Gemini launch vehicle which will be coming up in about 15 min. from this time. Then the backups as well as the crewmen who work at the 100 ft. level will return to that area to continue the final preparations. We have a report from the block house at complex 14 that the loading of the acid aboard the Agena second stage, some ten thousand pounds of oxidizer has been completed. The Agena is now completely loaded with propellants.

The propellants that will be used by that sixteen thousand pound thrust engine when the Agena stage burns both on the flight portion of the mission toward orbit and then in the Gemini 11 flight plan itself during the 3 day mission. All systems still going well at this time, T-172 minutes 25 seconds and counting. This is Gemini launch control.

END OF TAPE

This is Gemini Launch Control, T-165 minutes and counting. T-1 6 5
We are about to start the pressurization of the Gemini Launch Vehicle.
This is the process whereby we feed nitrogen under pressure into the tanks
for both the fuel tanks and the oxidizer tanks, in both stages of the
Gemini launch vehicle to give them the proper pressure for flight. All
systems still going very well at this time in the countdown at a launch
complex 14. The test conductor, the chief conductor, in the blockhouse
launch vehicle test conductor, now has control of the clock. This means
that if any holds are going to be called, because of the simultaneous
countdown, a very complex countdown, in which we have nine different counts
winding up in one. Because of this, one man needs to control the clock if
a hold is called. The control of this clock previously has been at com-
plex 19, but now and down through the liftoff of the Atlas Agena, the
control will be dealt by the launch vehicle test conductor on complex 14.
In fact, he has had this clock control for about 15 or 20 minutes at this
time. All systems still going well. Our latest weather report indicates
that we will have satisfactory conditions for launch and satisfactory con-
ditions around the world-wide track. Astronauts Pete Conrad and Dick Gordon
should be suiting up in their trailer facility at Complex 16 at this time.
T-163 minutes, 30 seconds and counting. This is Gemini Launch Control.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 9/10/66, 5:48 A.M. TAPE 11, PAGE 1

This is Mission Control, Houston, at T-154 minutes. Flight Director Clifford Charlesworth has just checked all the worldwide network stations, tracking stations. He finds that they are all up and ready to support this mission. For a check on the countdown at the - we will now switch to the Cape.

This is Gemini Launch Control at the Cape. Now T-154 minutes 33 seconds and counting. At Launch Complex 19, we have completed our pressurization of the Gemini Launch Vehicle. We pressurized those propellant tanks in the Launch Vehicle with nitrogen. Following the pressurization, we took a close look at that leak that caused us some problems the other day. The leak was patched up and the leak was fixed. Following the pressurization, we took a close look and we are still in a go condition, we have no problems whatsoever with that pin-hole leak. At Launch Complex 14, a key guidance command test is in progress at the present time. This is a test between the radio command guidance system, which sends signals to the programmer and the Flight Control System on the Atlas/Agena vehicle. The test is in progress, it appears to be going well at this point. The next highlight at Launch Complex 14, as we get closer to the Atlas/Agena liftoff will be the liquid oxygen loading of the first stage which is due about 15 minutes from this time. Astronauts Neil Armstrong and Bill Anders are back in the Gemini 11 spacecraft cockpit at this time making their final checks. They will be ready to report to the prime pilots Pete Conrad and Dick Gordon when they arrive at the Launch Pad at about the 115 minute mark in the countdown. Now T-153 minutes 11 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini launch control T-145 minutes and counting, T-145 minutes and counting. We are now 50 minutes away from the planned Atlas Agena liftoff at 7:48 a.m. EST. All systems still going well in our pre-launch checkout both at launch complexes 19 with the Gemini launch vehicle spacecraft combination and complex 14 with the Atlas Agena. The test conductor at complex 14 has just given a go ahead for the liquid oxygen loading of the Atlas first stage at pad 14. This is the final phase of the propellant loading for the Atlas Agena vehicle. Earlier in the countdown we had loaded the propellants aboard the Agena second stage. The liquid oxygen which must be maintained at a temperature of some 297 degrees below zero, is brought aboard at a fast flow rate until it reaches 95 percent fill. In fast flow the liquid oxygen comes aboard at about two thousand gallons per minute. It is fed to the vehicle under pressure by helium. When it does reach its 95 percent fill we then start to top it off. Because of its extremely low temperature the liquid oxygen will continue to boil off. We have a cycle system for topping off that keeps on replenishing the liquid oxygen supply to maintain its 100 percent level. This will continue to ..until 2 minutes and 10 seconds before the planned liftoff. When the vent that permits the boil off will close and we should have our 100 percent supply of liquid oxygen on board. Prior to loading the liquid oxygen we chill down the various lines and the Atlas system. We have a chilldown to prepare it for the extremely low temperatures which the liquid oxygen must be maintained at. All systems still going well as we start our LOX loading at this time. The prime pilots for the mission "Pete" Conrad and Dick Gordon are due to depart their trailer ready room at complex 16 about 18 minutes from this time. The backups Neil Armstrong and Bill Anders still aboard the spacecraft making the final pre-ingress checks. T-142 minutes 41 seconds and counting. This is Gemini launch control.

END OF TAPE

Capt. Alan Shepard, Chief for the astronauts speaking to you from outside the suit trailer at complex 16. It is now 7:03. The astronauts will be coming out in approximately 5-minutes to go to pad 19 where they will insert into the spacecraft/ⁱⁿpreparation for flight. They both are in excellent spirits, we're a little concerned about the shower activity, but I believe the showers are moved well off the coast and we don't have to anticipate any delay in either the Atlas launch or the Gemini launch. Pete and Dick both had a hearty breakfast of steak and eggs this morning. They were joined by six of the new astronauts, Deke Slayton and myself. They're looking forward to the launch. We don't see any problems in the horizons at all right now, everything is go from this standpoint. Capt. Shepard, Tom Johnson, Associated Press, Did the astronauts have anything particular to say this morning about their suiting up and getting ready. (answer) Nothing in particular, we viewed the weather fairly carefully, not only the local weather but also the weather that they will experience during their high altitude orbits. This of course, is of great interest because we are anticipating taking some pictures from this high altitude and they were interested in that. That appears to be good, the weather in Australia is good, the weather over North Africa is good, and all in all it appears as though it is going to be a good flight. (question) Could you tell us if either one of them were carrying any sort of charms or mementos or anything of that sort. (Shepard) Yes, as usual, each of the pilots has , what they call, a personal preference package, personal preference kit, and personal things they want to carry along for themselves, their relatives and their friends. We usually leave it up to them after the flight to discuss these items if

they so desire. (Tom Johnson) Thank you very much.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 9/10/66, 6:08 A.M. TAPE 14, PAGE 1

This is Gemini Launch Control, coming up on T-135 minutes and counting.

T-135 and counting, all still proceeding very well with our simultaneous countdown for the Gemini 11 mission. We are now some 40 minutes away from the planned Atlas/Agena lift-off. All still going well.

At Complex 14 with the Atlas/Agena, as we continue to load the liquid oxygen aboard the Atlas first stage. We are about to go into one of our key guidance checks, one of our final checks of the airborne flight system. This is a test in which we check the autopilot which is located on one of the pods at ^{the} side of the Atlas first stage. The autopilot directs the vehicle during the early phases of the flight.

As a part of this test we turn on the hydraulic system of the Atlas vehicle and actually swing or swivel those engines, the primary engines at the base of the Atlas vehicle, in response to directions from the autopilot and the Flight Control System. These are the twin booster engines and the sustainer engine that gimbal or swivel in flight in response to the commands of the Flight Control System.

This test appears to be going well in its early phases at this time.

Astronauts Pete Conrad and Dick Gordon are still at their Ready Room at Complex 16. They are due to depart for the Pad at Complex 19 and the Gemini 11 spacecraft in about 8 minutes from this time. Now

T-133 minutes 28 seconds and counting. This is Gemini Launch Control.

END OF TAPE

.....25 minutes and counting, T-125. We are awaiting shortly the departure of the prime pilots from their ready room at Complex 16 to the Gemini 11 spacecraft a hundred feet atop Launch Complex 19. They should be leaving shortly. The prime pilots, Pete Conrad and Dick Gordon now have been up for about two and a quarter hours. Back at their crew quarters at the Kennedy Space Center they had a quick physical, were declared physically fit by Dr. Kelly of the Manned Spacecraft Center; had breakfast with about eight guests and then came down to the ready room. They have been in the ready room now about 15 minutes or so as they check out their suits and make their final preparations before leaving for the pad. All systems still going well at Launch Complex 19. The crews have made a pre-ingress check and all systems report go. At Complex 14 as we get closer, now some 30 minutes away to the planned liftoff to the Atlas/Agena, which is planned for 48 minutes after the hour. All is still going well in the final checkouts for the Atlas/Agena at this time. Now T-123 minutes, 45 seconds and counting, this is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control, T-122 minutes, 30 seconds and counting. Astronauts Pete Conrad and Dick Gordon are now on their way, they have boarded the transfer van and should be arriving at Complex 19 shortly. Waiting for them up at the 100-foot level, the so-called White Room, where the hatches are located for the Gemini 11 spacecraft are their backup pilots, Neil Armstrong and Bill Anders. They will be ready to give the two prime pilots a last minute report on the status of their spacecraft. From all the checks that have been going on in the blockhouse and in the spacecraft plus the checks with the mission control center in Houston, all the checkouts in the spacecraft have been going very well thus far. The astronauts are now rounding the turn and should be arriving at the base of the pad in a matter of minutes from this time. They will then proceed up the elevator to the White Room, get a brief report on the status, they'll be told the status is good and then they will be ready to board the spacecraft. They are due to go over the hatch at about the 115 minute mark in the countdown and then the hatches will be closed at about 100 minutes, five minutes before the Atlas/Agena is due to be launched. At T-121 minutes, 13 seconds and counting, this is Gemini Launch Control.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 9/10/66, 6:23 A.M. TAPE 17, PAGE 1

This is Gemini Launch Control. We're at T-120 minutes and holding. T-120 minutes and holding. We do not know the cause of the hold at this time, we will report it to you as soon as this information is available. In the meantime, Astronauts Pete Conrad and Dick Gordon have arrived in the White Room at the 100 foot level, the spacecraft test conductor has alerted the crew in the White Room to hold off on the insertion into the spacecraft, that is, the boarding of the spacecraft by the two pilots until we get a further report on the reason for this hold. T-120 minutes and holding. This is Gemini Launch Control.

END OF TAPE

This is Gemini launch control we're at T-120 minutes and holding, T-120 and holding. Our problem at complex 14, during the guidance command checks that were in progress they started at the 135 minute mark in the countdown, we had about a twenty minute test that was due to end at about 115^{minutes}/. During this test as we reported earlier the auto-pilot system, which is located on the POD on the side of the Atlas vehicle, was supposed to respond to some commands from the flight control system of the Atlas vehicle. The hydraulics are brought on and those three engines at the base of the Atlas vehicle the sustainer and the twin booster engines are supposed to respond to direction from the auto pilot during this test. That is, these engines should swivel or gimbal in response to directions from the auto pilot. Some readouts in the block house have indicated that booster engine #2 apparently did not respond to the signals from the auto pilot. We do not know whether the difficulty is with the auto pilot or with the booster at this time. However, this is strictly a reading in the block house and the crew is looking over the problem at this time. In the meantime the prime pilots astronauts "Pete" Conrad and Dick Gordon are in the white room at the 100 foot level. They are standing by for a further report from complex 14. To repeat, we encountered a difficulty in our auto pilot test during the final phases of the countdown for the Atlas Agena. One of the readouts we have in the block house concerned with this test does not appear to be correct. We are attempting to determine our problem whether it is in fact a problem with the launch vehicle itself or perhaps with some ground support item. As this is clarified we will report it to you. T-120 minutes and holding. This is Gemini launch control.

END OF TAPE

This is Gemini Launch Control, we're still at T-120 minutes and holding. T-120 and holding. Our problem is down at launch complex 14. It concerns readout that was received in the blockhouse in connection with the test of the Atlas auto-pilot system, that is the system that directs those three engines at the base of the Atlas vehicle to swivel inflight to give the vehicle a proper trajectory. During this test, we did receive one readout in the blockhouse that indicated that either the auto-pilot system or one of the boosters was not performing properly in response to the flight system of the vehicle. We're still making our checks in the blockhouse at launch complex 19 in the whiteroom, astronauts Pete Conrad and Dick Gordon are standing by. When the pilots arrived in the whiteroom, the crewmen who have worked with them for a number of weeks in the whiteroom, kidded the two pilots a little bit. They passed on to Pete Conrad, the command pilot, a model of a shoe-horn, which is about 4 feet high, it's a shoe-horn and they gave it to Pete because he had complained at some problems on trying to locate a television monitor in the spacecraft during some of the rehearsals for the orbital flight. This TP monitor is associated with one of the experiments on the Gemini mission, the so-called night image intensification experiment, designated D-15. A part of this experiment is to place a small television monitor in the cockpit. It is stored in one of the bays of the spacecraft and then located behind the command pilots head at the time in the experiment will be/operation. During the checkout, Pete Conrad

had complained of some difficulty at times in working with this monitor, said the crew presented them a present of a shoe-horn and on it, it had the title "TV monitor stowage tool," indicating that Pete might be able to put it to use to help him with his difficulty that he has had at times in the pre-launch check-out. We're still awaiting further word from complex 14, as the crew continues to check the readouts on auto-pilot booster situation. T-120 minutes and holding. This is Gemini Launch Control.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, Sept. 10, 1966 6:38 a.m. TAPE 20 PAGE 1

This is Gemini launch control still T-120 minutes and holding, T-120 and holding. We are standing by to receive further word from complex 14 as the crewmen attempt to verify the flight readiness of the auto pilot system and the hydraulic system that directs those three prime Atlas engines during the flight. The checks are still going on and we have received no final word at this time. In the white room at launch complex 19 astronauts "Pete" Conrad and Dick Gordon, prime pilots for the mission, are seated comfortably in front of the hatches of the Gemini 11 spacecraft standing by awaiting further word. Still T-120 minutes and holding. This is Gemini launch control.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 9/10/66, 6:43 A.M. TAPE 21, PAGE 1
This is Gemini Launch Control, T-120 minutes and holding. Still
holding at 120. The crew in the Blockhouse at 14 reports that
they cannot give us any estimate on the hold time at this point.
They have described the hold as indefinite, and they cannot
indicate how long it will take as they continue to verify the
autopilot system of the Atlas vehicle which is located on one
of those pods on the side of the first stage and the hydraulic
system that directs those three main engines to swivel or
gimbal in flight in response to the guidance system commands
to keep it on the proper trajectory. They are still awaiting
further word as the tests continue at Complex 14. At Complex 19
the prime pilots standing by, still outside the spacecraft await-
ing further word on the progress of the Atlas/Agena count.
T-120 minutes and holding. This is Gemini Launch Control.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 9/10/66, 6:48 A.M. TAPE 22, PAGE 1

This is Gemini Launch Control. T-120 minutes and holding. T-120 and holding. The Launch Director at Complex 14 has reported that they need an additional 10 minutes from this time to make a determination on how they stand as far as their checks with the autopilot system are concerned. Our problem came up during an autopilot test. This is a check of the autopilot system on the Atlas vehicle which generates signals that cause the vehicle to respond to guidance system commands during the powered phase of the flight. The crew at the Blockhouse is still trying to verify the autopilot system and perhaps the hydraulic system associated with it that causes those three main engines to swivel at the base of the Atlas vehicle. In about 10 minutes, the test conductor reports, he will know how they stand. This does not mean we will be ready to pickup at that time but we will be looking forward to a status report at that point. The prime pilots are being kept aware of the problem in the White Room at Complex 19. They are still standing by patiently, actually sitting in front of their two hatches of the Gemini 11 spacecraft. We are looking for more information in about 10 minutes from this time on the status of our checks at 14. Still T-120 minutes and holding. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control, we are at T-120 minutes and holding, T-120 and awaiting further word on the status of our checks of the autopilot systems with the Atlas vehicle at Complex 14. The Checks are still going on in an attempt to verify the autopilot system for the flight. We are standing by awaiting further word. T-120 minutes and holding, this is Gemini Launch Control.

END OF TAPE

This is Gemini launch control T-120 minutes and holding, T-120. Astronauts "Pete" Conrad and Dick Gordon now have been advised to depart from the white room at the 100 foot level. They have come back down the, they are in the process of coming down the elevator and they will return to their ready room at complex 16. It appears from the reports at block house at complex 14 that we are still not able to varify the auto pilot system of the Atlas vehicle. A recommendation has been made to replace the auto pilot canister that is the complete auto pilot system that is located in one of the PODs at the side of the Atlas vehicle. This recommendation is being considered and the various aspects concerned with it at this time. As far as our hold period is concerned we really do not have a cutoff because one of the restrictions for a hold on the Atlas Agena would be the temperatures in the Gemini launch vehicle. These temperatures are remaining quite stable and indicate that we would have no problem that would restrict the hold time of the Atlas Agena and the Gemini 11 mission at this time. We are standing by to get a further word on the recommendation of changing the auto pilot canister. If this is required there will be a hold of some 2 hours to accomplish this. We are awaiting further determination at this time on the decisions of these recommendations. These are strictly recommendations at this point, however the astronauts the two prime pilots have been alerted and are now returning to the ready room at complex 16 to stand by. T-120 minutes and holding. This is Gemini launch control.

END OF TAPE

This is Gemini Launch Control. We remain at T-120 minutes and holding. T-120 and holding. Here's a recap of the situation at the present time.

Astronauts Pete Conrad and Dick Gordon have now returned to the ready room at Launch Complex 16. They were in the White Room and were advised to return. Our difficulty has been attempting to verify an autopilot system aboard the Atlas vehicle. After some 30 minutes of checks to attempt to verify this the crew is reported they are still unable to do so. The recommendation is to change the autopilot in the cannister which is located on one of the pods beside the Atlas vehicle. In order to do this we will require a hold of perhaps several hours. As a further phase of this recommendation the liquid oxygen would be detanked from the Atlas stage and when the count would be resumed the oxygen would again be loaded aboard the Atlas. Now these are the recommendations, the mission people at this point are attempting to determine if we will be able to hold for this lengthy period from two to three hours and still be able to accomplish the mission. A guideline prior to the countdown today was that perhaps that we might be restricted to perhaps an hour and a half because of the condition of the propellants aboard the Gemini Launch Vehicle. As the temperatures rise, those propellants increase and decrease

the amount of gas in each of the tanks of the fuel and propellant and oxidizer systems. As this gas diminishes, we could wind up with a situation of not having enough gas to force the propellants to the thrust chamber, where of course they burn and provide the thrust. This one hour and 30 minute limitation appears not to be valid, it appears we have more time than that, because we had some heavy rainstorms this morning, and that has helped to keep the temperatures of the propellant system at a lower temperature than were anticipated at this point in the countdown. We are still standing by as the Mission Director, who is checking with the launch mission people here at the Cape, attempt to determine whether we will have enough time to accomplish this mission and make the fixes that are recommended. We are still at T-120 minutes and holding, this is Gemini Launch Control.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 9/10/66, 7:08 A.M. TAPE 26, PAGE 1

This is Gemini Launch Control, still at T-120 minutes and holding. The Gemini Mission people are still - are discussing our problem attempting to make a determination on whether we will have enough time today to make the proper fixes on the Atlas vehicle, resume the countdown, and be able to perform the dual launches of the Gemini 11 mission. Different aspects are being looked at to determine how much actual hold time we will have, that is, what is the latest time we will be able to launch that Atlas/Agena and still have time to launch the Gemini 11 spacecraft some 97 minutes later. This is the major point at this point - what is the latest time we can launch the Atlas/Agena and discussions are in progress to determine this cutoff time. The Mission Director, Bill Schneider, has been discussing the problem both with the flight people in Houston and the launch people here at the Cape. It is anticipated also that the crew will be advised and the problem will also be discussed with them. The prime pilots, Pete Conrad and Dick Gordon/^{are} now back in their Ready Room at Complex 16. This is where they suited up for the mission. They stood by for about 30 minutes, seated in front of their Gemini 11 spacecraft before being advised of the recommendations that a fix would be required with the autopilot system. We are still standing by to get a determination on whether we will have enough time to launch today. In order to replace this canister the estimate is made that it will take about 2 hours to do the work. That is, to physically go out to the pad at Complex 14 to take out the present autopilot canister located in the pod and to

GEMINI 11 MISSION COMMENTARY, 9/10/66, 7:08 A.M. TAPE 26, PAGE 2

replace it with new one that will work properly. We have detanked the liquid oxygen. Now in the process of doing it with the Atlas vehicle, this means that when we are ready to pickup our count-down, we will have to recycle to 70 minutes earlier in the count. That is, we are now at T-120 and holding. If the work is performed, if the determination is made that we will be able to launch, then the count will be resumed at 190 minutes, or 70 minutes earlier than we stand right now because we would have to recycle back to pickup certain procedures prior to the liquid oxygen loading. The reason for taking out the liquid oxygen, of course it must be maintained at 297 degrees below zero, it is very temperature sensitive and during a hold of some 2 hours it is felt that it would be best to take it out at this point and send it back in when the countdown is resumed. That is our status. We are standing by for a determination of the hold time. T-120 minutes and holding. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control, we're still holding at T-120 minutes. T-120 minutes and holding. We're still attempting to make a determination on our problem at this time. The main question/^{is} whether we will have enough time today, in order to launch the Atlas Agena and Gemini Launch Vehicle. We are standing by for a further determination. T-120 minutes and holding.

END OF TAPE

This is Gemini launch control T-120 minutes and holding. The mission has been "scrubbed". The determination has been made by project officials that in order to make the fix required on the Atlas vehicle that is the auto pilot system, there would be too much time necessary in order to accomplish the mission. The real cutoff here is concerned with lighting for the rendezvous in orbit. It appears that we would not have enough time today to fix the auto pilot problem, conduct the two launches and still have proper lighting conditions for the rendezvous of the Gemini 11 spacecraft and the Agena 11 in orbit. Of course that rendezvous is planned for the end of the first orbit of the mission. The lighting conditions would not be satisfactory if we got off too late this afternoon. The determination has now been made^{that} we will not have enough time to launch. The mission has been postponed. We will get a report shortly on reschedule information. This is Gemini launch control.

END OF TAPE

This is Mission Control,,Houston. Gemini mission director, William Schneider has announced that the Gemini 11 mission will be recycled 48 hours. That will put liftoff Monday morning. Flight director, Clifford Charlesworth reports that launch times will remain essentially the same. They'll be reworked some, but they will not change over one or two minutes. This is Gemini Mission Control, Houston.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, SEPT. 12, 1966, 3:37 A.M., TAPE 1, PAGE 1

This is Gemini Launch Control, T-286 minutes and counting. T-286 minutes and counting. All going well with the Gemini 11 countdown at this time. We have had no problems since we picked up the countdown shortly after 10:00 P.M. EST last evening. All is going well both at Launch Complexes 19 and 14 at the present time. Our weather report indicates that we will have satisfactory conditions for launch both here at the Cape and on the worldwide track. Those clouds that were supposed to be coming in on three layers as it turns out broke up earlier than anticipated and it looks like we will have good conditions for launch morning. All systems looking good at this time coming up on 37 - 38 minutes past the hour about 7 seconds from this time. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control, T-273 minutes and counting. T-273 minutes and counting, just a little more than 51 minutes past the hour. Our countdown for Gemini 11 going very well at this time as it has since the count was picked up late last evening. All systems looking very good. The prime pilots for the mission astronauts Pete Conrad and Dick Gordon still in bed at this time, but they're expected to be awakened about 9 minutes from this time. Their backups, astronauts Neil Armstrong and Bill Anders are aboard the Gemini 11 spacecraft at the 100 foot level at launch complex 19. They've been in the cockpit now for about 2 hours, making the preliminary checks of the spacecraft system. Our checkouts of both launch vehicles, both at launch complex 19 and 14 going very well. At launch complex 14, we're starting to load the fuel aboard the Agena stage, that Agena second stage. The gantry service structure is still around the launch vehicle at this time. We'll load some 4,000 pounds of hydrazine fuel aboard the Agena second stage. Following that fuel loading, the tower will be rolled back and we'll complete the propellant loading of the Agena following tower rollback by loading the acid oxidizer aboard. At this time, our key test of the power system of the Atlas Agena vehicle is going on. This is a check of those batteries in the launch vehicle both stages, to insure that the flight batteries will be operable. We go from external power, ground power to internal power on the bird and then after insuring that all the batteries are operating satisfactory, we return to

external power to conserve that battery energy. We finally go on the flight batteries at a very late point in the countdown. Our weather situation looks very good for launch attempt this morning. A forecast late yesterday indicated that there would be some extensive cloudiness in the area. However, these clouds, particularly at lower altitudes, started to break up sooner than anticipated. We expect to have good conditions for launch. The overall forecast calls for partly cloudy skys in the Cape Kennedy area, winds from the south about 10 knots, and off-shore sea state at 1 to 3 feet, and a temperature of about 87 degrees. We'll have none of those low clouds that were indicated in the forecast yesterday, they have reported that they have broken up earlier than anticipated. Just partly cloudy skys which should be acceptable for launch. As far as the rest of the world-wide track is concerned, across the Atlantic on the first passage of the Gemini spacecraft after launching acceptable landing conditions will prevail. In the mid-Pacific landing zones, centered about 300 miles east-northeast of Honolulu, partly cloudy conditions are anticipated, winds from the east at about 15 knots and a sea state of 5 feet. In the western-Pacific landing zone, centered about 700 miles south-southwest of Tokyo, mostly cloudy conditions with occasional showers. Winds will be from 10 to 15 knots, sea state 4 feet. In the eastern-Atlantic landing zone, centered about 300 miles west of the Cape Verde Islands. Cloudy conditions also will prevail in that area, occasional showers, winds will be light and variable and the sea

state 3 feet. In the primary landing zone in the western-Atlantic, centered about 800 miles east of Miami, partly cloudy conditions, with winds from the east at about 12 knots and a sea state of 2 to 4 feet. There are some five tropical storms roaming about the Pacific Ocean. Among them are tropical storms, Franchesca, Gretchen, and Helga. All of them are in the Pacific between Central America and Hawaii. Perhaps some of these will be observed by the astronauts once they are in orbit. Now, coming up on T-268 minutes, 45 seconds and counting. All systems going well in our countdown at this time. This is Gemini Launch Control.

This is Gemini launch control T-256 minutes 27 seconds and counting on the Gemini 11 countdown. All systems going well at both launch complexes at the present time. A matter of about 6 or 7 minutes ago the prime pilots for the mission astronauts "Pete" Conrad and Dick Gordon were awakened at their crew quarters at the Kennedy Space Center. The man who woke them up was Alan Sheppard chief of the astronauts office who also spent the night in the crew quarters last evening. We had it logged as awakening the prime crew at one minute past the hour 5:01 A.M. EST. Meanwhile at launch complex 14 we have just about completed that propellant loading the fuel loading that is, of the Agena second stage. The crews there are making preparation to pull back that Gantry Service structure. It is due to go back about ten minutes from this time and it will be locked in its fall back position. Following that operation the crew will proceed to complete the propellant loading of the Agena by loading the acid oxidizer aboard the stage. At launch complex 19 the backups Neil Armstrong and Bill Anders still in the cockpit of the Gemini 11 spacecraft as they have been for a little over 2 hours at this time, making all the preliminary checks. One of the highlights we have passed in the countdown already came at the T-315 mark when we had the first several tests in the regular countdown, the first of several tests of that auto pilot of the Atlas launch vehicle which caused us some problems on Saturday and forced the postponement on that day. This test went very well as a part of the test and this is a regular procedure at that point in the countdown. The auto pilot system was tested and

activated. It in turn sent signals to the hydraulic system of the launch vehicle which in turn swivelled those three engines at the base of the Atlas in response to the Auto pilot signals. The tests were successful and there will be more tests of that system as regularly planned in the countdown. The final one coming about T-135 minutes and lasting about 20 minutes in the countdown.

All systems still going very well. WE've had no problems since the countdown picked up at about 10;04 P.m. EST last evening.

The Gemini launch vehicle is fueled in rather rapid time. It took just a little more than three hours to accomplish it last evening. The propellant loading of the Gemini launch vehicle began at 8:54 P.M. EST and was completed at 11:52 P.M. EST, just 2 seconds less actually than three hours. Now coming up on T-253 minutes 33 seconds and counting 10 minutes and 30 seconds after the hour. This is Gemini launch control.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 9/12/66, 4:19 A.M. TAPE 4, PAGE 1

This is Gemini Launch Control at T-245 minutes and counting. T-245 and counting on the Gemini 11 mission. Our countdown is still going well at this point. We have had an excellent countdown thus far since the countdown was picked up late last evening. Astronauts Pete Conrad and Dick Gordon who were awakened about 18 minutes ago, at 1 minute past the hour, now should be down the hall starting their physical examination. This is at the Kennedy Space Center Crew Quarters on Merritt Island. Dr. Fred Kelley of the Manned Spacecraft Center will be the man giving them their final physical checks. Following the physical, they will sit down and have breakfast and then appear to depart from the Crew Quarters to the Ready Room at Launch Complex 16. Their backups, Neil Armstrong and Bill Anders, still aboard the Gemini spacecraft making the preliminary checks. We are gearing up at Launch Complex 19 to pickup that Gemini Launch Vehicle countdown about 4 minutes from this time. We loaded the propellants aboard the Gemini in a little less than 3 hours last evening, and now as far as the simultaneous countdown is concerned which has about 9 different phases to it, the Gemini Launch Vehicle is the last major one to join the count and that will occur at the 240 minute mark. At Launch Complex 14, the crews are gearing up, making their final preparations in an anticipation of rolling back the Gantry Service Structure that surrounds the vehicle. We have completed loading the fuel aboard the Agena second stage and after the tower is rolled back, the crew will proceed with the

GEMINI 11 MISSION COMMENTARY, 9/12/66, 4:19 A.M. TAPE 4, PAGE 2

acid oxidizer loading with that same stage to complete the propellant loading of the Agena. Now coming up at T-243 minutes 9 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control at T-230 minutes and holding. T-230 minutes and holding. This hold is declared just a matter of a minute or so ago. Our problem was down at launch complex 14. It appears to be associated with some ground support equipment at launch complex 14, right at the launch complex itself. We expect to have further details on the problem shortly. We have no estimate on the length of the hold at this time. T-230 minutes and holding. To repeat once again, the problem at complex 14, where the Atlas Agena is located. We understand the problem is with some ground support equipment, not necessarily associated with the launch vehicle itself. We expect to get further details on it shortly. The test conductor has not given no indication of any estimate on the length of the hold at this time. T-230 minutes and holding. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control. We've resumed our countdown on the Gemini 11 mission. Now coming up on T-228 minutes, 54 seconds and counting. We did run into what appeared to be a problem at Launch Complex 14 associated with some ground support equipment. We do not have further details on that at this time. We do expect to get them shortly on a briefing from the test conductor at 14; as soon as they are available, we will bring them to you. In the meantime, we have resumed the countdown. The hold which was declared at T-230 minutes lasted about three or four minutes duration. Meanwhile, Astronauts Pete Conrad and Dick Gordon should be finishing up their physical examination at their crew quarters at the Kennedy Space Center and getting ready for breakfast. We understand that the only guest they will have for breakfast this morning will be Alan B. Shepard, Chief of the Astronaut Office, who was the man who awakened them just about 34 minutes ago -- 35 minutes ago at one minute past the hour. Now at T-227 minutes 55 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This Gemini launch control T-219 minutes and counting T-219 at 45 minutes past the hour. Our countdown is still proceeding at this time. We have a report from the crew quarters at the Kennedy Space Center Merritt Island that astronauts "Pete" Conrad and Dick Gordon have completed their physical examination and received a "thumbs-UP" report from Alan Sheppard indicating that the examination went very well. The examining physicians were Dr. Fred Kelley and Dr. Alan Harter. Dr. Harter spells his name H A R T E R. The astronauts now going back and getting ready to sit down for breakfast. Their one guest for breakfast this morning will be Alan Sheppard the chief of the astronaut office. Going back about 12 minutes in the countdown we did encounter a brief hold at the T-230 minute mark. Our report now is that the purpose of that hold was strictly to synchronize the clocks in the countdown. We are still aiming toward a planned liftoff time of 7:49 A.M. EST at this time. We completed the loading of the fuel aboard the Agena stage and the crews at launch complex 14 are gearing up to remove that Gantry service structure. At complex 19 the Gemini launch vehicle count is in progress. It came into the simultaneous countdown at the 240min. mark of the count or some twenty-three minutes from this time..23 minutes from this time, 23 minutes earlier. Our countdowns are proceeding at the present time and now T-217 minutes 18 seconds and counting. This is Gemini launch control.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 9/12/66, 4:54 A.M. TAPE 8, PAGE 1

This is Gemini Launch Control, T-210 minutes and counting. T-210 on the Gemini 11 mission, and we are proceeding. We have a report from the Crew Quarters at the Kennedy Space Center at Merritt Island that the prime pilots for the mission, Astronauts Pete Conrad and Dick Gordon are sitting down to breakfast with their one guest, Astronaut Alan B. Shepherd, who is Chief of the Astronaut Office. The menu consists of a New York strip sirloin steak, scrambled eggs, juice, toast, and coffee. The Astronauts will be departing from the Crew Quarters in about 10 or 15 minutes from this time. They will go from the Crew Quarters to the Ready Room at Launch Complex 16 where they will start to don their suits and make their final preparations for the mission. The Astronauts will depart from Launch Complex 16 at about the 125 minute mark in the countdown and proceed to the 100 foot level at Launch Complex 19 where the hatches for the Gemini 11 spacecraft are located. The backup pilots, Astronauts Neil Armstrong and Bill Anders are still aboard the Gemini spacecraft at this time making the preliminary checks. They will be ready to report to the prime pilots on the status of their spacecraft when they do get to that 100 foot level. Now coming up on T-208 minutes 34 seconds and counting. This is Gemini Launch Control.

END OF TAPE

T-200 minutes and counting. T-200 minutes and counting. We are proceeding with our Gemini 11 countdown. Astronauts Pete Conrad and Dick Gordon are just about finishing up their breakfast at the crew quarters, Kennedy Space Center, and are expected to depart from their KSC crew quarters at about 13 minutes past the hour and proceed to launch complex 16 in the ready room where they will make their final preparations for the mission. At the 100 foot level, which so-called whiteroom at launch complex 19, the crew is in the process of departing the 100 foot level at this time. This includes crewman 3 and crewman 4, who are the backup pilots for the mission, astronauts Neil Armstrong and Bill Anders. They'll come down from the whiteroom in anticipation of the pressurization of the Gemini launch vehicle. The pad area must be clear. We pressurize those propellant tanks in both stages of the Gemini launch vehicle with nitrogen. This is due to occur at about the 165 mark in the count, however, we are going very well at 19. It might come a little earlier than that time. Following the pressurization, the backup pilots and the flight-room crew will return to the 100 foot level to continue the final preparations of the spacecraft. The astronauts are due to - the prime pilots are due to depart from pad 16 and their ready room at about the 125 minute mark in the countdown. At complex 14, we're still in the process of rolling back the gantry service structure. The next item that will be coming up when the service structure is secured, would be the loading of the acid oxidizer aboard the Agena stage. Now at T-198 minutes, 10 seconds in counting, this

is Gemini Launch Control.

END OF TAPE

This Gemini launch control T-187 minutes and counting, T-187 and counting. We are proceeding with our countdown and we now have a report that the prime pilots astronauts "Pete" Conrad and Dick Gordon have just departed from the crew quarters at the Kennedy Space Center. We have it logged at 15 minutes past the hour. They are on their way to the ready room at launch complex 16 where they will first get a thorough briefing on the status of the countdown. They will don their space suits and go through the final checkout. They are due to start from the ready room at 16 to go to the pad at about the 125 minute mark in the count. At launch complex 14 we are in the process of final securing of the Gantry service structure. And at launch complex 19 the crew and the backup pilots have departed from the white room at the 100 foot level in anticipation of pressurization of the Gemini launch vehicle which will be coming up shortly. When we pressurize the Gemini launch vehicle we bring nitrogen aboard to pressurize the propellant tanks in both stages. Following successful pressurization the white room crew, the support crew, plus the backup pilots Neil Armstrong and Bill Anders will return to the spacecraft. Now coming up on T-185 minutes 37 seconds and counting. This is Gemini launch control.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 9/12/66, 5:39 A.M. TAPE 11, PAGE 1

This is Gemini Launch Control, T-165 minutes and counting. T-165 and counting, and we are proceeding on the Gemini 11 mission. At this point in the countdown, we have completed the pressurization of the Gemini Launch Vehicle at Launch Complex 19, and the White Room crewmen and the backup pilots, Neil Armstrong and Bill Anders have returned to the White Room and to the Gemini spacecraft to make their final checks. The prime pilots, Astronauts Pete Conrad and Dick Gordon are at the Ready Room at Launch Complex 16 where they are donning their space suits and making their final preparations. At Launch Complex 14, we have completed the loading of the acid oxidizer aboard the Agena stage. This completes the propellant loading of the Agena. We have just received a report on what might have been a problem at Launch Complex 14 which has been resolved at this time. A short while ago it was determined that a small piece of foreign material was noted in a hydraulic feed line, part of the ground support equipment that feeds hydraulic fluid from a unit at the complex to the launch vehicle. It was determined that this was a small sliver of metal. Checks have been made and it was determined that there was no way that this metal could get to the launch vehicle to have any effect of the vehicle itself. The metal now has been isolated and checks have determined that it can have no effect on the launch vehicle or the hydraulic feeding to the vehicle. It is not a problem at this time. It has been resolved and we are proceeding. We are now at T-163 minutes 20 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Mission Control, Houston at T-154 minutes, 57 seconds. A check with the worldwide tracking network shows that all stations are go and are able to support this mission. For a report on the progress of the countdown, we'll switch now to Cape Kennedy.....Our countdown is preceding. The simultaneous countdown for Gemini 11, we now have nine different parts of the countdown and all in operation at the same time. At this present time, the major four of course being the Gemini launch vehicle and spacecraft at complex 19 and the Atlas Agena vehicle at complex 14. Coming up at complex 14, about 10 minutes from this time will be the final propellant loading of the Atlas vehicle. This is loading some 18,600 gallons of liquid oxygen aboard the Atlas vehicle. Because of the extremely low temperature of liquid oxygen, the so-called cryogenic type of propellant, we will have to continue to top-off the liquid oxygen till we get down to several minutes before the liftoff. We feed in the liquid oxygen in a fast flow of some 2,000 gallons a minute and when we reach 95 per cent in the load, we will then begin to top-off, that is, feeding in additional liquid oxygen as it starts to boil off and go through a vent. This vent will remain open as reported until about 2 minutes before liftoff. For 5 or 10 minutes before we start loading the liquid oxygen, we condition the plumbing over various parts at the base of the Atlas vehicle for the extremely low temperatures that they'll encounter when the liquid oxygen comes aboard. This is done by initially feeding some liquid oxygen to these various plumbing phases in the Atlas vehicle. At complex

19, the backups, Neil Armstrong and Bill Anders still in the cockpit of the Gemini 11 spacecraft making their final check and are awaiting the arrival of prime crew, astronauts Pete Conrad and Dick Gordon who will coming to the pad about 25 minutes from this time. All going very well at our countdown at this time, now at T-152 minutes, 37 seconds and counting. This is Gemini Launch Control.

END OF TAPE

GEMINI 11 MISSION COMMENTARY 9/12/66 5:59 am TAPE 13 PAGE 1

This is Gemini launch control T-145 minutes and counting. All proceeding very well with the Gemini 11 mission countdown at this time. Our reports from both launch complex 19 with the Gemini launch vehicle spacecraft combination and the Atlas/Agena at complex 14 indicate all is going well. Our weather forecast also looks good for both here at the cape and the around the worldwide track. As far as the report here at the Cape is concerned the latest forecast indicates broken clouds at 12 to 15 thousand feet, winds from the south under 10 knots, a seastate off the Cape of one to three feet, visibility of ten miles and temperature expected of about 83 degrees by launch time. Around the rest of the track the weather is acceptable for launching today both in the Atlantic and the Pacific oceans. There are five tropical disturbances in the Pacific between central America and Hawaii, these include tropical storms; Gretchen and Helga. They will have no effect on the mission whatsoever and in fact might provide some interesting observations for the astronauts once they are in orbit. We are standing by to get further reports on astronauts "Pete" Conrad and Dick Gordon and they are still at the ready room at complex 16 where they have donned their space suits and will await the word to go to the pad which should come at the 125 minute mark in the count. Now T-143 minutes 30 seconds and counting. This is Gemini launch control.

END OF TAPE

Good Morning, I'm Captain Alan Shepherd, Chief of the Astronaut Office and Flight Crew Director for GT-11. Things have going very smoothly with the Flight Crew this morning thus far. They were awakened at 5:02, two minutes after five this morning. The medical exam was routine and showed no difficulties. We had a slight substitution - for breakfast this morning at the crew's request, we had some strip sirloins instead of fillets, which they enjoyed. There were three of us at breakfast, Pete, Dick, and myself. Since that time, from the quarters here through the suiting trailer at Complex 16, things have been going extremely smoothly. As I understand things have been going with the rest of the count. Apparently the problems that they had experienced earlier in the count have been taken care of. The crew will be leaving here at 7:19 approximately 15 minutes to go to Pad 19 to ingress into the spacecraft. We're very pleased with the weather here locally here locally this morning, their responses were enthusiastic as they saw the lack of cloud covering and the lack of thunder storms. They are also pleased about the weather around the world which has improved somewhat over Friday's weather, that is, with respect to the photographic situation. - - T-143 minutes and counting - with respect to the photographic situation, the weather looks better around the world. Do you have any questions?

Tom Johnson Tom Johnson, 18, ...garbled..

Shepherd No just the usual conversation. They are always interested, of course, in how the count is

Shepherd progressing and how the weather looks. So these things are always discussed. There are no pranks this morning. There seem to be less people around. Everything was running smoothly, I don't remember any specific comments they made.

QUESTION Doug Friedlander, Houston Post, I was wondering are they going to take any good luck trinkets up with them, and if so, what are they?

Shepherd Yes, as a matter of fact. Both of them have a small package of personal items which they are carrying. This has been done in the past on almost every flight. Also, as we do in the past, we leave the choice of discussing those up to the pilots and many times they do discuss these at the post-flight press conference.

END OF TAPE

This is Gemini Launch Control, T-135 minutes and counting. T-135, all still going well with the Gemini 11 countdown. The key operations at this point in the countdown are going on down at launch complex 14 with that Atlas Agena launch vehicle. We've started the liquid oxygen loading of the Atlas first stage. This the final stage for the propellant loading of the overall vehicle. Earlier in the count, we brought the propellants aboard the Agena second stage. Also, just starting at this point, is an auto-pilot systems test. This comes in at T-135 in the count and we check the auto-pilot of the Atlas vehicle located in the pod at the sight of the Atlas first stage. The auto-pilot generates signals to the hydraulic system of the launch vehicle causing the engines to swivel or gimbal. They will react according to the signals received from the auto-pilot and the flight control system of the vehicle. This was the problem that we encountered on our launch attempt last Saturday. It's about a 20 minute test, and close to the end of that test, it was determined on Saturday that we had a problem with the auto-pilot system. Earlier in the countdown, about 3 hours ago, at the T-315 minute mark, we had another auto-pilot test and it went very well. This was a regular test in the countdown, we've added no new tests. It just comes regularly at the T-315 mark and once again at 135. This test is starting now. From all our data from the earlier tests we had no problems whatsoever. Now, T-133 minutes, 22 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini launch control T-125 minutes and counting, T-125. At both launch complexes particularly launch complex 19 the crewmen have just gone through a status report in anticipation of the arrival of the prime crew at complex 19. They are due to depart from their ready room shortly. They will go aboard their transfer vehicle and get to the base of pad 19 in a matter of minutes then go up the elevator and report to the white room to get the final status report from the backup pilots Neil Armstrong and Bill Anders who have been in the spacecraft for approximately over four hours making the preliminary checkouts since early this morning. All systems going well on both countdowns. The liquid oxygen loading on the Atlas vehicle at complex 14 going very well as they continue to load it aboard. All systems still operating fine at this point. The astronauts due to depart shortly. This is Gemini launch control.

END OF TAPE

This is Gemini Launch Control, T-123 minutes and counting. All still going very well on the Gemini 11 count. Astronauts Pete Conrad and Dick Gordon are on their way to launch complex 19. Just a matter of seconds ago, they boarded their transfer vehicle and are now on their way - the short trip between complex 16 and 19 and the 100 foot level, the so-called whiteroom where the Gemini 11 spacecraft is located. About 7 minutes from this time, the two pilots will go aboard the spacecraft, hook in to the environmental control system and the communication system and become a part of this overall simultaneous countdown. The hatches are due to be closed about 22 minutes from this time, at about the 100 mark in the countdown, some five minutes before the planned Atlas Agena liftoff. All systems still going well at both launch complexes as a result of the systems status checks that came up just a short while ago in anticipation of the prime pilots arrival at the pad. So, in a matter of minutes, we'll have our two pilots up in the whiteroom getting the final status report on the progress of the count. They will be told at that time that we are in a go condition at this time for an Atlas Agena launch at 49 minutes past the hour, and the Gemini launch some 97 minutes thereafter. At T-121 minutes, 34 seconds and counting. This is Gemini Launch Control.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 9/12/66, 6:25 A.M. TAPE 18, PAGE 1

This is Gemini Launch Control, T-119 minutes and counting. T-119 some 24 minutes away from the planned Atlas/Agena lift-off. All systems still going well as the prime pilots, Pete Conrad and Dick Gordon arrive at the White Room at Launch Complex 19. They are checking signals with their backup pilots, Neil Armstrong and Bill Anders at the present time and about 2 or 3 minutes from this time, they will climb aboard the Gemini spacecraft. Once they do get in, they will go through a series of checks leading up to the closing of the hatches on the spacecraft at T-100 minutes. Once they are plugged into the cockpit, they will go through some communications checks. They will be talking to Stoney who is the capsule communicator in the blockhouse, Astronaut C. C. Williams. This will be followed by some biomedical checks. These checks will be monitored also by the physicians in the blockhouse to make sure they are getting good readings. The Astronauts now coming aboard the spacecraft, both Pete Conrad the Command Pilot and Dick Gordon the Pilot for the Gemini 11 mission. They are now seated in the spacecraft and the White Room crewmen will proceed to help tie them into the countdown and tie them into the system and now to become an integral part of the simultaneous countdown from here on down. We are at T-117 minutes 38 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini launch control T-115 and counting, T- 20 minutes and counting for the Atlas/Agena launch vehicle, the first of our dual launches on the Gemini 11 mission. At complex 14 all is still going well as we get closer in the terminal phases of the countdown for the Atlas/Agena launch. We have a report from the test conductor at complex 14 that auto pilot test which began about 20 minutes ago has been satisfactorily completed. Checks are now going on with the range safety destruct system of the launch vehicle at 14, the Atlas/Agena. This is a test between the launch vehicle and the Air Force Eastern test range, range safety equipment. It would be used in the event the Atlas/Agena flight would have to be terminated early because of some type of range safety problem. This test is in progress and appears to be going well at this time. Astronauts "Pete" Conrad and Dick Gordon getting seated in the cockpit of the Gemini 11 spacecraft as the crewmen in the white room go through the procedures of tying them into the spacecraft itself and of course tying them into the overall countdown. The pilots will not be able to view the Atlas/Agena liftoff because of their location in the spacecraft with the hatches closed. However by being part of the countdown they will get a thorough report of the progress of the final phases of the countdown and of course the power phase of flight of the Atlas/Agena. Now T-113 minutes and 32 seconds and counting. This is Gemini launch control.

END OF TAPE

This is Gemini Launch Control, T-110 minutes and counting. T-110 minutes and counting. T-15 minutes and counting for the Atlas Agena vehicle on complex 14. Astronauts Pete Conrad and Dick Gordon have just come in on the countdown. The spacecraft test conductor asked their status for the Atlas Agena launch and they both reported go. Our tests are continuing at complex 14 as we reach the final phases of the count and the reports are that the countdown is going very well there also. We're aiming for a liftoff of the Atlas Agena of 49 minutes past the hour. Following successful liftoff and insertion into orbit, the Gemini launch vehicle, spacecraft condonation, will be coming up for the liftoff about 97 minutes later, with a planned buildin hold at T-3 minute mark. All systems still going well in the white-room at complex 19 at this time and as the crewmen gear up to prepare to put their hatches over the Gemini spacecraft. All systems still looking good, T-108 minutes, 53 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control T-105 minutes and counting in the overall Gemini countdown and 10 minutes and counting to the Atlas Agena launch. At Launch Complex 19 in the white room the hatches have just been closed on the Gemini spacecraft. Actually, we are just about 2 minutes ahead in the countdown at complex 19. The count is going very well. The hatches have been closed and astronauts Pete Conrad and Dick Gordon now tying into the countdown. The spacecraft will first be - first with a 100 percent oxygen, as far as the environmental control system is concerned and then we will start to get readouts in the blockhouse for some of the biomedical sensors to check out that they are operating properly. There also will be some communications checks between Astronaut C. C. Williams, Capsule Communicator in the blockhouse, who is designated Stoney and the two pilots in the spacecraft. At Launch Complex 14, the launch mission director, Merrit Preston has given a go to the test conductor for the Atlas Agena launch after checking all aspects of the launch operation, both at pad 14 and 19. All systems are go at this point, now some 9 minutes from the planned Atlas Agena lift-off. When we do get ignition of the Atlas Agena those three main engines at the base of the vehicle will ignite they will ignite shortly after the two small vernier engines ignite on the side of the Atlas, this is a total of five engines involved. The primary ones being the twin boosters and the main sustainer engine at the base of the vehicle. The vehicle will generate some 390 000 pounds of thrust and then we will get the release for lift-off. It should be at

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48 minutes past the hour. The ignition sequence will start with the Atlas vehicle at about 4 seconds before zero culminating in full thrust and lift-off at zero mark in the count, which as reported, should be at 49 minutes past the hour.

Now coming up on T-103 minutes, 8 minutes away from the Atlas Agena lift-off. This is Gemini Launch Control.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 9/12/66, 6:44 A.M. TAPE 22, PAGE 1

This is Gemini Launch Control, T-100 minutes and counting. T-100 and we are five minutes away from the planned Atlas/Agena lift-off. We have a clearance to launch as far as the range is concerned and the Agena second stage is now on internal power. The clock that will direct the burning of the Agena engine later in the powered flight already has started. This starts at about T-7 minutes. At Launch Complex 19, we are taking a close look at the command pilot's hatch at the present time. We are going to see whether we do have a problem or not, but the count is still going at this time. We are T-99 minutes 21 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control, T-97 minutes, 5 seconds and holding. Just as the announcement started, we went into a hold. We're 2 minutes and 5 seconds away from the planned Atlas Agena liftoff. The hold was declared because of a problem with the command pilot's hatch at the whiteroom at launch complex 19. It appears to be concerned with the seal that helps close the hatch and helps to give us our pressurized condition in the spacecraft. We opened it shortly - about 2 minutes ago - to take another look. The hatch was reclosed, but it appears, we still have a difficulty. We are going to hold the Atlas Agena launch until we determine our status with the command pilot's hatch of the Gemini 11 spacecraft. The count now has been recycled to T-103 minutes. This brings us back to just the time before the Agena second stage goes on external power. We've taken the power off the batteries on the Agena and we are back on external at complex 14 at this time. This leaves us 8 minutes and holding as far as the Atlas Agena is concerned, as we take a closer look at the command pilot's hatch on the Gemini 11 spacecraft. T-103 and holding, this is Gemini Launch Control.

END OF TAPE

This is Gemini launch control T-103 minutes and counting and the overall simultaneous countdown and T-8 correction T-103 minutes and holding on the overall countdown, T-8 minutes and holding for the Atlas/Agena. Our problem is concerned with the command pilots' hatch of the Gemini 11 spacecraft. After the hatches were closed the crew in the white room goes through a series of leak checks around the spacecraft. They determine that they apparently had a slight leak on the command pilots' side. The hatch was re-opened checks were made of the seal and the hatch was closed again. This came about 2 minutes before the planned Atlas/Agena liftoff as the countdown was continuing and the determination was made to hold the countdown to insure that that hatch would be okay for launch. The crew is still making the checks in the white room at this time and we are standing by for further reports on the command pilots' hatch. T-103 minutes and holding. This is Gemini launch control.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 9/12/66, 6:53 A.M. TAPE 25, PAGE 1

This is Gemini Launch Control. We are still at T-103 minutes and holding in the overall count. T-8 minutes and holding for the Atlas/Agena Launch Vehicle. The crewmen in the White Room at the 100 foot level at Launch Complex 19 still making close checks of the Command Pilot, that is Pete Conrad's hatch. After it was closed, they determined that there was a possible leak. They double checked the seal - that coating that's inside that connects with the hatch when it closes and are still continuing their checks now to verify that hatch for flight. We will not go ahead with the plan to launch the Atlas/Agena until we are assured that the Gemini spacecraft is also in a go condition. Still holding at this time. We recycled as reported earlier back to the 103 minute mark in the count so that we could go back on ground power with the batteries in the Agena second stage at this point. And when we do resume the countdown at 103 the Agena goes on internal power. We want to conserve that battery power so we recycle back to this point. Still T-8 minutes and holding for the Atlas/Agena launch as we make further checks of the Gemini spacecraft. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control. It's still at T-103 minutes and holding. T-8 minutes and holding as far as the Atlas Agena is concerned at pad 14. It has just been recommended and the determinations are made, that we are going to pick up the countdown shortly. Maybe, in about 30 or 40 seconds from this time. The spacecraft test conductor has reported that he will give us an exact status about 4 minutes from this time, so we do not have the complete readoff on that hatch yet but we plan to continue the count. It is expected and hoped that some 4 minutes after we picked up the count, we will get a go from the spacecraft and be able to continue down with the Atlas Agena countdown. We're going to pick up the countdown here shortly. 5 seconds from this time - T-103 and counting, T-8 minutes and counting for the Atlas Agena. The Agena second stage now is going back on internal power on the flight batteries there. The checks continue of the commands pilot, Pete Conrad's, hatch at complex 19 and we're looking for a report from the spacecraft test conductor about 3 or 4 minutes from this time. Now at T-102 minutes, 33 seconds and counting. This is Gemini Launch Control

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 6:58 AM

TAPE 27, PAGE 1

This is Gemini Launch Control. Now 6 minutes 38 seconds away from the planned Atlas Agena Launch at complex 14. The Spacecraft Test Conductor, at 19 reports that we have a preliminary go for the Gemini spacecraft. This is after some checks of the command pilot's hatch which created the hold a matter of minutes ago. We are now counting and we appear to have a go for the Atlas launch. Complex 14, now that we have resumed count, their checkout appears to be going well. As reported, the Atlas - the Agena second stage now is on internal power. All systems looking good at this point. Now T-101 and 2 seconds and counting. T-6 minutes and counting at this point for the Atlas Agena launch. This is Gemini Launch Control.

END OF TAPE

This is Gemini launch control T-5 minutes and counting, T-5 for the Atlas/Agena launch and we are go for the Atlas/Agena. We are go both at launch complex 19 and 14. We have received another report on the status of that hatch and it is good. Our countdown is now proceeding. We are now at 4 minutes and 40 seconds and counting. This is Gemini launch control.

END OF TAPE

This is Gemini Launch Control, T-4 minutes and counting. T-4 for the Atlas Agena. All still going well. We're aiming for a liftoff time of five minutes past the hour. Five minutes past the hour. At this point in the countdown as reported, the Agena Second Stage is on internal power and coming down during the final phases of the count, we'll cover some of the highlights to you because they will come rather fast as the real time occurs. We're now at three minutes and 34 seconds away from the planned liftoff. The Agena destruct system will be on at the three minute mark. The liquid oxygen tanking will be secured at two minutes and ten seconds. That will give us a launch vehicle weighing some 267 000 pounds sitting at Launch Complex 14. We're now at three minutes and 15 seconds away from the launch. All still going well at this time. Further down in the count the ignition system is on for the Atlas, it goes on internal power at T-1 minute and 40 seconds. Now coming up on T-3 minutes mark. T-3 minutes and counting. T-3. As we continue further down in the count the automatic sequencer comes in at the 18 second mark of the Atlas countdown. From that point on down all is automatic and its climaxed by the ignition sequence starting at 4 seconds before liftoff, those two vernier engines will ignite on the side of the Atlas as soon as they reach proper pressure. This will have the sequence to follow through to ignite the twin boosters and the sustainer engine generating some 390 000 pounds of thrust. Now at 2 minutes 25 seconds away from the Atlas Agena liftoff. This is Gemini Launch Control.

END OF TAPE

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This is Gemini Launch Control, T-2 minutes and counting. T-2 all still going well at this time. The liquid-oxygen vent has been closed and we are starting to pressurize the liquid-oxygen tanks in the Atlas vehicle. This is to bring them up to flight pressurization for the powered phase of flight. Now one minute and 42 seconds and counting. The Atlas launch vehicle now has gone on internal power at Complex 14, that is, on the flight batteries within the vehicle itself. It is completely on its own power at this point. From this point down, the Atlas test conductor will be watching a series of lights on his console - Ready Lights. We are now 1 minute 20 seconds away from the planned lift-off. These Ready Lights will turn from amber to green as the various events occur during these final phases of the count. T-1 minute 9 seconds and counting. Coming up on 1 minute, mark, T-1 minute and counting, T-1. This is Gemini Launch Control, T-50 seconds and counting. The range ready light has come on - the range is giving a GO for launch. We still get - we are looking for a GO from range safety. The autopilot ready light now is on. T-40 seconds and counting. T-35 seconds and counting. During these final moments of the count all is still looking good. T-30 seconds and counting. T-25 seconds and counting as the Test Conductor monitors his console, he is getting his green lights. T-20, T-18 seconds and counting. We have the sequencer in. T-15, all still looking good. T-10, 9, 8, 7, 6, 5, 4, 3, 2, 1 - we have ignition.. lift-off. Ten seconds looks good. Flight Dynamics reports is still looks good at 25 seconds.

END OF TAPE

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Range safety still "Green" at 35 seconds. One minute still looking good. Thrust building up 3000 feet per second now. Still looking good 1 minute 20 seconds. Atlas/Agena 10 miles high now, about 15 miles downrange. Plus 1 minute 42 seconds, still looking good. Velocity 5000 feet per second, building toward 6. Looks good for BECO, Booster Engine Cut Off. BECO, Booster Engine Cut Off, the two outboard booster engines have fallen away. Velocity is 10,000 feet per second now. Atlas/Agena driving on up with the sustainer engine. Still looking good, 50 miles high now, approaching 100 miles downrange. We marked lift-off time at 5 minutes 1 second past the hour. Coming up on 12,000 feet per second velocity now, 150 miles downrange, about 70 miles altitude. Still looking good, 3 minutes 30 seconds. Still getting good reports as we approach 200 miles downrange, 80 miles altitude. Velocity is building to 14,000 feet per second. Ground track looking good. 15,000 feet per second now still looking good. Coming up on SECO, Sustainer Engine Cut Off. SECO. 110 miles high now, 350 miles downrange. SECO looked good. Agena has separated from the Atlas. Agena will enter a short coast period now prior to the main engines start. Standing by to ignite the Secondary Propulsion System, SPS start. Provide ullage for the primary burn. Looking good. Agena's main engine has started. BPS burn looks good. Agena approaching 150 miles altitude now, 600 miles downrange, 18,000 feet per second velocity. Seven minutes, still looking good.

END OF TAPE

Still looking good, 7 minutes, 38 seconds approaching 20,000 feet per second velocity, 160 miles altitude, 800 miles down range. This Agena burn is looking good. Still looking good, approaching the 161 nautical mile mark now in altitude. Approaching 24,000 feet per second velocity. Just a few seconds away from this Agena burn. Coming up on the cutoff now... Mark PPS cutoff. Cutoff looked good. We have an orbit, we do not have the numbers on it yet. We're standing by for those. We do have an orbit with this Agena. The preliminary figures on this Agena orbit - 164 by 159 nautical miles. These are preliminary, will be refined later. We'll now switch to the Cape.... This is Gemini Launch Control at the Cape on our Gemini Launch vehicle countdown. We're now at T-83 minutes 22 seconds and counting. Astronauts Pete Conrad and Dick Gordon were given a running report of the Atlas Agena's fine performance as they continue their checks in the Gemini 11 spacecraft. They've gone through a series of checks already that included purge of the spacecraft cabin. We've taken a closer look at that hatch. It was determined that it was go for the Atlas Agena launch and it is still go now. There was a slight leak when the hatch was first closed, however, leak checks showed about 3 or 4 minutes before the Atlas Agena liftoff, that all was well. We were able to continue the count at that time. We've made further checks since the liftoff and all looks well with the Gemini 11 spacecraft at this time. Coming up in just a couple of minutes will be a switch list check by both pilots of all the switches in

the Gemini 11 spacecraft - all the switches in the cockpit. They will check each one of them and insure that it is in the proper position for launch. Participating in this test will be the blockhouse crewmen, including the capsule communicator astronaut C.C. Williams. So all is going well back here at the Cape as we continue the Gemini Launch vehicle count. T-82 minutes 8 seconds and counting. This is Gemini Launch Control.

END OF TAPE

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This is Mission Control Houston. We confirm shroud jettison from the Agena. The shroud has jettisoned from the Agena. This is Mission Control Houston.

END OF TAPE

This is Gemini launch control T-75 minutes 19 seconds and counting. All going well on the Gemini countdown at this point. Astronauts "Pete" Conrad and Dick Gordon aboard the Gemini 11 spacecraft going through their switchless checks. A check of all the switches in the cockpit to insure they are in the proper position for launch. During the powered phase of flight of the Atlas/Agena as reported earlier the two pilots were getting a running report on its performance. We had a little noise on the line as we attempted to listen to their conversations but they basically were remarking "very good" as they received continuing reports on the good progress of the flight. A short while ago "Pete" Conrad the command pilot made a request of the spacecraft test conductor, he's looking ahead a little bit, and he asked them for the liftoff time for the Gemini launch vehicle. He was told by the spacecraft test conductor that it looks like it will be about 42 minutes after the next hour, that is, here at the Cape 9:42 A.M. EST. It'll be 42 minutes plus a number of seconds and as the spacecraft test conductor pointed out we'll have to get word on the exact orbital status of the Agena spacecraft in orbit from Houston Flight. This will come a little later in the countdown actually at the T-40 minute mark. We expect to get a good report on that and once we do get that we are able to plan our parameters for this very precise rendezvous that we are attempting that will take place. As a result we will wait about 20 minutes or so before we get our exact timing on this and of course for the exact amount of time in the hold/^{that}will be declared in the three minute mark in the count. So generally we are looking for 42 minutes after the next hour plus a number of seconds

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for the Gemini launch vehicle liftoff. All still going well with the count at this time at 73 minutes 24 seconds and counting. This is Gemini launch control.

END OF TAPE

This is Gemini Launch Control, T-70 minutes and 1 second and counting. Now at T-70 minutes and counting. All going well with the Gemini countdown at Complex 19 at this time. The crew has cleared the White Room at the 100 foot level as we look forward some 10 minutes or so from this time to lower the erector at Launch Complex 19 leaving the Gemini Launch Vehicle spacecraft combination standing free. The Command Pilot Pete Conrad was just alerted a minute or so ago by the spacecraft test conductor that we will open the prevalues for the oxidizer system of the first stage of the Gemini Launch Vehicle. The astronauts are alerted on this because when these prevalues open they can actually feel it. They can feel a slight oscillation in the spacecraft and we alert them that this is going to happen. The reason we open the prevalues for the first stage oxidizer is to go through the so called POGO stand pipe test. This is where we actually charge a stand pipe associated with the oxidizer system in the first stage with nitrogen. This will help us to prevent a vibrations that could occur during flight as a result of the oxidizer flowing through to the thrust chamber. By charging the small stand pipe with nitrogen, this gives us little cushion if you will that the oxidizer can push against and this inturn prevents the oscillations that we might get in flight. This is occuring at this time. All is going well with the countdown with 68 minutes 30 seconds and counting.

This is Gemini Launch Control.

END OF TAPE

This is Mission Control Houston at 63 - T-63 minutes. We are at 32 minutes into the flight of the Agena now and it is down over Africa. Tracking station reports it looks good. We have checked the tracking network stations throughout the world and they all report that they are up and ready to support the Gemini launch. For a report on the progress of the count we will switch now to the Cape.

This is Gemini Launch Control at the Cape. All still going well here at Launch Complex 19 with our countdown. Just a matter of minutes ago, the GE/Burroughs guidance system, which had been used for the Atlas Agena launch to direct the Atlas Agena to direct the Agena craft into orbit now has come back to support the operation at Launch Complex 19. The same radio command guidance system is used with the Gemini launch vehicle during the flight.

Basically they changed some trays to put in the proper parameters for the Gemini launch vehicle and they are ready to go. They have done this fast turn around and they are ready to support the testing of the guidance system at Launch Complex 19. We have a report here in the Control Center, depending on the exact parameters of the Agena spacecraft, we will have a window in which to launch of some 2 to 5 seconds. Some 20 minutes from this time, when Houston Flight reports the exact status of the Agena, our computers will go to work and tell us the exact window we will have, based on the early data we have right now, it will be between 2 and 5 seconds. The nominal was 2 seconds. Of course, this can vary slightly depending upon the exact performance of that Agena stage and orbit. Next highlight in the countdown, coming up as far as the written count is concerned, about 6 minutes from this time will be the lowering that erector at Launch Complex 19 to leave the Gemini launch vehicle spacecraft standing free. It is due at 55 minutes in the countdown; expected to occur then

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or perhaps just a little bit early because the countdown is going very well at this point. It is now T-60 minutes 48 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control, T-57 minutes 16 seconds and counting. Just about 20 or 30 seconds ago, the crew began to lower that 138 foot erector at launch complex 19. The vehicle is starting to stand 3 at this time. The erector is lowered at the start by a 150 horsepower motor that powers a wench. It first is used to pull the erector back from the umbilical then^{as} the erector gets over a little bit, the wench acts as a break, to ease it down and to insure that it is placed in it's proper position. All systems still going well in the countdown, as the erector comes down, it should take about 10 minutes. Now T-56 minutes 35 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Mission Control Houston at 49 minutes, T-49 minutes and the Agena lifted off 46 minutes 6 seconds ago. Agena 11 is now down over the Indian Ocean just a short time ago past out of acquisition at Tananarive. All systems were go at that time. For a report on the count we'll go down to the Cape.

This is Gemini Launch Control at the Cape. All still going well here. At this point we have been alerted that we will probably have just two seconds in a window in order to conduct our launching of the Gemini Launch Vehicle spacecraft combination. However, we're still awaiting final parameters on the Agena. We'll get them after it passes the Carnarvon tracking station. We'll receive the final word from Houston Flight and run it through a computer and get our exact time. Basically what we're looking at now would be an ignition of the Gemini Launch Vehicle at 42 minutes and 22 seconds after the hour. This would mean that some 3 seconds later we would get the liftoff of the Gemini. To repeat again it looks like we'll have a two second window but we're going to await the final parameters after the Carnarvon pass in order to determine our exact situation. The erector is down at Complex 19. The Command Pilot Pete Conrad has been informed by the spacecraft test conductor that we've got a 12 000 foot ceiling with broken clouds. This is very satisfactory for the launching. This was the result of a weather check that occurred just a short time before the report was given to the spacecraft. At this point, Astronaut Dick Gordon will get into some readouts from the cockpit to the block house. It will concern temperatures, some of the propulsion

parameters and an overall report on the environmental control system within the spacecraft itself. All systems still looking good. T-47 minutes 5 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini launch control T-43 minutes and counting, T-43 as the Agena 11 approaches the Carnarvon tracking station as far as tracking is concerned. We're still doing very well with the countdown here at launch complex 19. In fact we are a few minutes ahead on several aspects of the spacecraft count. All is going very well. Astronaut Dick Gordon has completed his readouts to the block house. They all appear to be at the proper value. The astronauts are now participating in a program sequence test, this is concerned with a guidance system of the Gemini launch vehicle and of course the spacecraft computer which is used as a backup to the guidance system during the powered phase of flight. All systems still looking very good. We are aiming for liftoff at 42 minutes and some seconds to be designated after the hour. We'll get the final parameters after this pass over the Carnarvon with the Agena 11. There will be a built-in hold at the the T-3 minute in the count. Once again pending the exact data on the Agena we will then announce the exact hold time. However, it will be in the area of 2 minutes and some seconds. We are now at T-41 minutes 42 seconds and counting. This is Gemini launch control.

END OF TAPE

This is Mission Control Houston at T-35 minutes. The Agena is over Carnarvon. After this Carnarvon pass we'll refine the telemetry we get there to come up with more precise orbital figures. The weather around the world in all the landing areas is looking good. They have partly cloudy weather but nothing to prevent a landing in any of the areas. During the Gemini liftoff this time, if communications are good, we will attempt to bring you the air-ground transmissions between the crew and the Cap Com during the launch phase. Also, during this Gemini 11 launch, shortly after insertion the spacecraft may do up to 3 axes translations. Former Gemini missions we've normally burned only velocity errors fore and aft. This time because we are attempting a first revolution rendezvous we will do some of the maneuvers that we have normally done in the second and third revolutions. These will include fore aft, up down, and if necessary we will correct the velocity vector at insertion to get parallel to the plane of the Agena if we should not launch directly into the plane. We will make a burn to get parallel to this plane and then about 29 minutes into the mission we will burn into the plane. For a report now from the Cape, we'll switch there.

This is Gemini Launch Control at the Cape. T-33 minutes 11 seconds and counting. All still going well. We're

still standing by to get the final word from Houston Flight on the orbital parameters of the Agena 11 so that we can determine the exact hold we'll have at T-3 minutes and the exact T-0 or ignition time for the Gemini Launch Vehicle, which will be some seconds after 42 minutes after the hour. With the Gemini Launch Vehicle at this point, the automatic sequencer has come in. It comes in at the T-35 minute mark and although it is not completely automatic all the way down, the sequencer does come in some 10 actions and monitors some 25 other functions down to the T-3 minute mark. From T-3 minutes down after we've resumed the countdown following the hold, the operation with / Launch Vehicle is completely automatic down to ignition and liftoff. On the Gemini 11 spacecraft atop the Launch Vehicle at this time work is still ahead of the designated times in the countdown and it is going very well. The two pilots' are gearing up now to prepare for propulsion test of the Gemini 11 spacecraft. These are those 8 - 25 pound thrusters, a part of the so called orbit attitude and maneuvering system which ring the base of the adapter of the Gemini spacecraft. We will follow these thrusters to work out the system and insure that they are in proper operating order for the launch. This should be coming up in a matter of several minutes from this time. The astronauts Pete Conrad and Dick Gordon are making their preparations in the spacecraft as are the crew in the block house. All systems still good at T-31 minutes 25 seconds and counting. This is Gemini Launch Control

END OF TAPE

This is Gemini Launch Control, T-22 minutes and counting. T-22, all going well at this point in the count. The backup pilots, Astronauts Neil Armstrong and Bill Anders, now here in the Control Center, monitoring the remainder of the count. Earlier this morning they had spend some 4 to 4½ hours in the Gemini 11 cockpit making the preliminary checks before the prime crew came aboard. We now have our parameters from Houston Flight and it gives us the following numbers. We will have a hold at the T-3 minute mark in the count of 2 minutes and 20 seconds duration. We will be aiming for T-0 which is ignition for the Gemini Launch Vehicle at 42 minutes and 23 seconds after the hour. We should get lift-off three seconds thereafter or at 42 minutes 26 seconds. The latest orbital parameters we have for the Agena 11 are as follows: 156 by 166 nautical miles. To repeat, 156 by 166 nautical miles, this is termed an acceptable orbit for the Agena 11. At Launch Complex 19, at the present time, we just started the actual static tests of those thrusters of the Gemini spacecraft propulsion system. There are eight-25-pound thrusters at the base of the adapter of the Gemini 11 and the crew is now firing these thrusters to make sure that they will be operating properly for launch. We test them in the following sequence: yaw left, pitch down; yaw right, pitch up; and yaw left. These are the

variations that the thrusters can operate, some of the variations, and we are testing to insure that it is working properly. The test is just about to be completed, it appears to be going very satisfactorily as we watch the thrusters perform. We are now at T-20 minutes 2 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control, T-14 minutes and counting. T-14.... All still proceeding very well at this point for the Gemini 11 countdown. We had a report that the computer has given the update for the latest perimeters of the Agena 11 in orbit. We're going to go into a hold at the T-3 minute mark. The hold will be about 2 minutes and 20 seconds duration. We'll then resume the countdown, feed the latest update information to the launch vehicle guidance system and the Gemini spacecraft computer, which acts as a backup to the guidance system during the powered phase of flight and count on down, aiming for an ignition of the Gemini launch vehicle at 42 minutes and 23 seconds after the hour. We'll have a sequence then on the pad of about 3 seconds until we get release and those explosive bolts that hold the launch vehicle to the base of the pad, are activated and the launch vehicle lifts off. So to repeat, looking for an ignition at 42 minutes and 23 seconds after the hour with liftoff 3 seconds later. The Gemini Launch Vehicle test conductor has made his check of all the recovery forces that have been activated for this particular mission. They are report go. All the various aircraft and other recovery elements are in operation at this time and we are in a GO condition. We're now T-12 minutes 30 seconds and counting. This is Gemini Launch Control.

END OF TAPE

This is Gemini Launch Control T-9 minutes and counting. T-9, all still going well with our countdown at this point. The command pilot for the mission, Pete Conrad, just asked for the right time and he was given it. The command pilot wanted make sure that all the clocks in the spacecraft were synchronized properly and the spacecraft space test conductor counted down to given him synchronization time to get the clocks all squared away in the spacecraft. This has been accomplished and we are proceeding. Just a matter of minutes ago we completed one of the key test with the radio command guidance system. This is where the guidance system did generate signals that were sent to the launch vehicle and those two engines at the base of the Gemini launch vehicle responded to the commands by swiveling or gimbaling as it is called. These engines will do the same maneuvers in space to keep us on the proper trajectory working on signals from the guidance system of the launch vehicle itself. All systems still looking good as we come up on T-8 minutes and counting. This is Gemini Launch Control.

END OF TAPE

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This is Gemini launch control T-6 minutes and counting, T-6 all still going well with the countdown. Three minutes from this time we will go into a planned built-in hold. That hold time has now been refined to an exact 2 minutes and 21 seconds. Following that hold time we will resume the countdown aiming toward an ignition of the Gemini launch vehicle at 42 minutes and 23 seconds after the hour. Three seconds thereafter we should get the liftoff. That is the sequence between ignition and liftoff. We get the ignition of the Gemini launch vehicle at zero in the countdown. At launch complex 19 we have gone through a very thorough status check just moments ago both of the key participants with the Gemini launch vehicle and the spacecraft. All systems including the two pilots in the spacecraft reported they are go. This was confirmed by Launch Mission Director Merrit Preston and Gemini 11 Mission Director Bill Schneider who is at Mission Control in Houston. Coming up on T-5 minutes at this point, T-5 minutes and counting. This is Gemini launch control.

END OF TAPE

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PAGE 1

This is Gemini Launch Control, T-3 minutes and holding.
T-3 minutes and holding. This duration of the hold
will be about 2 minutes and 21 seconds. We will then
resume our countdown aiming toward the planned ignition
time of the Gemini Launch Vehicle of 42 minutes and
23 seconds after the hour. When we do resume our count-
down we will bring aboard the final parameters through
the Gemini Launch Vehicle guidance system and the Gemini 11
spacecraft computer. This is the data that is required for
this key first orbit rendezvous on the Gemini 11 mission.
Now at T-3 minutes and holding. This is Gemini Launch
Control.

END OF TAPE

This is Gemini Launch Control, MARK. We have resumed our countdown now at T-2 minutes 56 seconds and counting. Coming up on T-2 minutes and 50 seconds and counting. As we just come out of the hold all situations still looking good. We're completely automatic as far as the sequencer is concerned with the Gemini Launch Vehicle. We have received confirmation that the Launch Vehicle and the spacecraft computer have received the proper parameters for the flight. Confirmation just came through, we've coming up on T-2 minutes 30 seconds and counting. We have a GO from the range at this point, the supervisor range operations that we are clear to launch. As we get down here in the final moments of the countdown we'll open the various prevalues that permit the fuel and the oxidizer to come down toward the thrust chamber in the first stage. There is one valve left and that is a thrust chamber valve which will open when we reach zero in the countdown to permit the fuel and oxidizer to ignite. Now coming up on T-2 minutes. MARK, T-2 minutes and counting. T-2. We continue to check in the block house to make sure that all - we are getting the proper readouts. T-1 minute 50 seconds and counting. Still going well at this point. We'll be coming up on the important power transfer in about 10 seconds or so. This is when we go on internal power in the Gemini Launch Vehicle. The Gemini spacecraft went into internal about 10 minutes earlier completely on internal power. MARK, T-90 seconds and counting. T-90. We are still

looking good during the final phases of the Gemini countdown at this point. We have confirmation that we are now on internal power with the Gemini Launch Vehicle. Now at T-1 minute 15 seconds and counting. We've made a final check of those engines, those two engines at the base of the Gemini Launch Vehicle. We have swiveled them once again in response to the guidance system and they have shown that they are working properly at this time. Coming up on T-60 seconds, MARK. T-60 seconds and counting. Coming down the final phases now we will start to open those prevalues to permit the fuel and oxidizer to come down to the chamber. T-50 seconds and counting. All still going well at this point. Not to many reports from the block house now as they continue to monitor. T-40 seconds and counting,,still looking good at this time. T-35. As we continue down we'll get ignition at zero. T-30 seconds and counting. We'll get ignition at zero with the Gemini Launch Vehicle. At some 2.8 seconds we'll take a close look,when we get up to 77 percent thrust there'll be another 2/10 of a second to release those explosive bolts. T-15 seconds and counting. T-10, 9, 8, 7, 6, 5, 4, 3, 2, 1, zero. We have ignition.

Liftoff, clock is running. Roll program, looking good.
Roll program complete. Pitch has started. We are GO
two miles high approximately two miles downrange. Data looks
good. Approaching six miles altitude, four miles down-
range. Liftoff time, 42 minutes 27 seconds after the hour.
HOU one plus forty, MARK.
S/C Roger, Mode 2.
HOU Roger, DCS.

Guidance update has just gone up to the spacecraft. Flight
Director is polling his controller for a staging status.

HOU You are go for staging.
S/C 11 is GO.

Twenty-eight miles altitude.

S/C (garbled)
HOU Roger, DCS.
S/C (garbled) and engine ignition.
HOU Roger, staging engine ignition.
S/C Guidance initiate (garbled)
HOU Houston, Roger.

Looking good, second stage guidance has initiated. We're
50 miles high now and approaching the 120 miles downrange.

HOU 11, Houston. Your steering looks good.
S/C Gemini 11, Roger.

We are right down the middle, Flight Dynamics says.

Approaching 70 miles altitude, 200 miles downrange. Ground track looking good. Flight Director taking a status check for SECO.

HOU Gemini 11, this is Houston. You are GO, over.

S/C Roger, 11 is go here. RCS is right on the money.

HOU We confirm that.

Eighty miles high now, 280 miles downrange. We'll be coming up on point 8 shortly. That point at which 80 percent of required thrust is achieved. Looking good.

HOU Standby for point 8.

S/C Roger, point 8.

HOU MARK, point 8.

S/C Roger, MARK point 8.

We have 80 percent of thrust now and building on up. We have SECO.

S/C Gemini 11, advise SECO

HOU Roger, Gemini 11 you're GO for M=1.

S/C Roger.

ANT Antigua AOS.

HOU R dot desired is plus one. Over.

Gemini 11, R dot desired, plus one.

S/C Roger, plus one. The IVI's must be separated
for 39, one less zero up and down.

This R dot refers to the radius rate, the up down burn.

END OF TAPE

.....Telemetry shows the spacecraft still burning.

S/C00085.....15 seconds down.

HOU Roger.

HOU Gemini 11, Houston. Your liftoff was one half
second late.

S/C Gemini 11, roger. The burn was complete. Start
to align the platform.

HOU Roger. Fairings jettison, over.

S/C Say again.

HOU Fairings jettison, over.

S/C Fairings is jettisoned.....

HOU Gemini 11, Houston. One minute to LOS.

This is Gemini Control, 12 minutes into this flight.
We have had loss of signal at Antigua now. Out of range.
Flight Surgeon reports that the heart rates during launch
on the command pilot, 170. On the pilot, 140. We will
stand by now; when the Gemini 11 reaches Ascension, we will
give them a backup figure for the plane change burn and we
will also take some more figures on their orbit at that
time. This is Gemini Control.

END OF TAPE

This is Gemini control 19 minutes into the flight. Preliminary look at this orbit indicates that we did achieve very close to what we were looking for. However, the Flight Dynamics Officer wants to take a look at the spacecraft over the Ascension station before coming up with any definite figures. However, he says it does look good. This is Gemini control.

END OF TAPE

This is Gemini control 22 minutes into the flight. Gemini 11 is in contact with the Ascension Island station. We'll play back this conversation from the start now.

HOU Gemini 11 this is Houston over.

S/C (garbled)

HOU Roger, this is Houston, you're in an 87 by 151 orbit, over.

S/C 87 by one five one sounds perfect.

HOU Roger and we won't have a plane change for you because we don't trust this data we've got. over.

S/C Roger, no plane change, but we're figuring garbled...3 feet to the left, over.

HOU Roger, copy.

S/C (Garbled) plane change

HOU That is affirmative, over.

S/C He said affirmative.

Gemini 11 Houston one minute to LOS.

END OF TAPE

This is Gemini Control, 31 minutes into the flight. Gemini 11 will acquire at Tananarive in a couple of minutes. Pete Conrad and Dick Gordon should have burned a 3 fps left plane change maneuver. At 29 minutes 16 seconds, that maneuver was computed onboard, and we expect that they have burned that. At Tananarive, we will give them a backup calculation for their terminal phase maneuver. We'll stand by now for the pass at Tananarive. This is Gemini Control.

END OF TAPE

This is Gemini Control, 36 minutes into the flight.

Gemini 11 is in contact with Tananarive. Reports they can see the Agena. We will start this tape from the beginning of this pass now.

Tananarive , go remote.

TAN Tananarive

HOU Gemini 11, this is Houston, over. . . Gemini 11, this is Houston, over.

S/C Go ahead Houston, read you loud and clear, be advised, we're inside of 50 miles and we have the Agena in sight.

HOU Roger, your GETB, for the terminal phase backup is as follows, over.

S/C Standby one minute. Okay we're ready to copy.

HOU Roger. Your GETB is 49+43, address 25 01 396, address 26 00 170, address 27 900 66, XRA is +18.9, YRA is -8.6, range is 22.7 miles and range rate is 107 fps closing, over.

S/C Okay, 11 (garbled)

HOU Roger.

S/C 23.2 degrees, 47. (?) degrees. burn rate 387.
Now we have a visual on the Agena of about 75 miles and our voice rate and radar voice rate reading is $\frac{1}{2}$ a degree in both pitch and yaw.

HOU Roger. Gemini 11, Houston. Remember your

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HOU radiator. Over.

S/C Roger, we are going to flow and - right now.

HOU Roger.

S/C This is Gemini 11. We are (garbled) ...7 miles.

This Gemini Control. Gemini 11 just reported a range of 34.7 miles from the Agena. (PAUSE)

HOU Gemini 11, 1 minute until LOS.

S/C Roger, ...we have the flashing light.

HOU Roger.

This is Gemini Control 42 minutes into the flight. Gemini 11 is out of acquisition of the Tananarive station now. The YRA and XRA numbers you heard John Young pass up to Gemini 11 in the backup TPI information, YRA is the distance below; XRA is the distance behind Agena at TPI, we were looking for 10 miles below, 50 miles behind. We calculate now that at TPI the distance below will be 8.6, distance behind will be 18.9. These are backup figures computed on the ground. The crew use onboard figures, however. This is Gemini Control.

END OF TAPE

This is Gemini Control 52 minutes into the flight.
Gemini 11 has just performed the terminal phase maneuver
over Carnarvon and just put in a call to the Carnarvon Cap
Com. We'll listen to that pass now.

CRO Carnarvon has AOS.

HOU Roger.

CRO Mark 50 seconds.

HOU Roger.

CRO C-band track.

HOU Roger.

HOU What have you got on O₂ pressure?

CRO Zero, zero on the meter.

CRO All systems look good, Flight.

HOU Roger.

CRO I've got coder lock.

S/CGemini 11, over.

CRO Go ahead, 11.

S/C We're burning right now.....140 forward, 27
down, 5 left.....forward, 22 down, 4 left,
over.

HOU Say again first.

S/C Roger, bank left.

CRO Flight, did you copy?

CRO Flight, Carnarvon.

HOU Right, Carnarvon.

CRO Did you copy that?

HOU Negative.

CRO I only got part of it. The air-to-ground is
real noisy. I'll wait till after the burn
and I'll get it from him.

HOU Roger.

S/C DCS O₂ is about 40.....manual.

CRO Roger.

S/C Gemini 11,..... All orb rate compensations.

CRO Roger. Do you copy, Flight?

HOU Negative, say again.

CRO He's taken off orb rate compensations....

S/C Gemini 11.....complete.

CRO Roger.

CRO Gemini 11, Carnarvon.

S/C Go.

CRO Those readouts you gave us, the air-to-ground
was real noisy. Could you say again, please?

S/C Roger.....140 forward, 27 down, 5 left. Back-
up solution, 140 forward, ...2 down, 4 left.

CRO Roger.

HOU Carnarvon from Flight.

CRO Go ahead, Flight.

HOU Did I copy he was bumping up the O₂ pressure?

CRO That's affirmative.

HOU Roger. Send us a main Gemini, please.

CRO Roger.

CRO 11, Carnarvon.

S/C Go ahead.

CRO Your radiator's go and we're giving you a go
for 16-1.

S/C Roger. We're go here, Bill.

CRO They're looking good, Flight.

HOU Roger. He did say he taking orb rate....

S/Cis .70 percent right now. I expect that
it'll come up a couple of percents after the
long burn.

CRO Roger.

S/C Carnarvon, give us a call one minute from LOS
and remind us that we've got our ECS O₂ heater
on manual. We're running in manual.

CRO Roger.

HOU Carnarvon Cap Com, Houston Flight.

CRO Go ahead, Flight.

HOU Bill, he did say he was taking out orb rate
compensations?

CRO That's affirmative.

HOU Rog. What did you copy for the PQI readings?

CRO I read 140 forward, 27 down....

HOU No, no, no. The PQI readings. 70 or 76?

CRO 70 percent.

HOU Roger.

CRO And the pressure is coming up in the O₂.

HOU Roger.

HOU Carnarvon from Flight.

CRO Go ahead.

HOU Send us a Gemini main when he turns the heater
 off and you're about one minute to LOS.

CRO Roger.

CRO 11, Carnarvon.

S/C Go ahead, Carnarvon.

CRO Go ahead and turn the heater off. One minute
 to LOS.

S/C Okay, we're still a little low but we'll go
 ahead and turn it off.

CRO Carnarvon has LOS on Gemini.

 This is Gemini Control, 58 minutes into the flight. The
last data point we got at Carnarvon showed a range of 15.2
nautical miles between Gemini 11 and its Agena. You may have
had some difficulty hearing the delta V of that terminal phase
maneuver. It was 141 feet per second. 141 feet per second,
terminal phase maneuver. This is Gemini Control.

END OF TAPE

This is Gemini Control, 1 hour and 11 minutes into the flight. Gemini 11 is just coming up on acquisition at Canton. We may have a very brief acquisition there before going into Hawaii. They were about 3-1/2 minutes away from Hawaii acquisition. To recap a little bit, following the insertion maneuvers, Gemini 11 performed a 3 foot per second plane change to the left at 29 minutes 16 seconds. The next burn was the terminal phase initiation maneuver at 49 minutes 43 seconds. This was 141 feet per second. Preliminary indications are that at the end of that burn Gemini 11 had 752 pounds of fuel remaining. These are preliminary figures. We expect the terminal phase finalization burn, the braking maneuver at about 1 hour 20 minutes 53 seconds into this flight. Gemini 11 should be very close to the Agena as we approach Hawaii and we'll standby and bring you that pass as soon as we have acquisition. This is Gemini Control, 1 hour 12 minutes into the flight.

END OF TAPE

This is Gemini Control, 1 hour 15 minutes into the flight. There was no conversation at Canton. We are in acquisition at Hawaii now but to date no conversation yet between the crew and the Cap Com. We'll standby to bring you any air to ground transmissions from Hawaii, should acquire very shortly.

HOU Hawaii, from Flight.

HAW Right

Hou Tell him your standing by, we missed him at Canton.

HAW Roger.

Gemini 11, Hawaii standing by.

S/C Ok, Hawaii. We're at 15 000 feet, roughly 50 feet a second and I have the running lights in sight and I have (garbled) lights.

HOU Copy that.

HAW Showing about 780 on O₂ tank pressure.

HOU Roger.

S/C Hawaii we're on clocks, at this time you can listen.

HAW Roger, copy.

S/C About 42 feet a second.

HAW Thank You.

GORDON Hey, I've got to fly her down a mite.

CONRAD I suppose so.

GORDON Garbled

CONRAD I suppose so.

GORDON I believe I'll go ahead and brake a little bit.

CONRAD Zero, point 3 miles.

GORDON Which give you second

CONRAD Point 4 miles

We got a range reading for you here.

Okay, he's dropping down on me.

Do you expect to be in with that quadrant?

GORDON Yes. (garbled) shows down and running, 39 feet
a second.

CONRAD Okay, back off a little bit.

GORDON Point 9, 6000 feet, 6000 feet point nine. A point
a mile.

CONRAD Okay. Looks like I've got the rates stopped (garbled)

GORDON Point 98 miles,

CONRAD I'm getting an intermittent firing on that down
thruster.

GORDON Seems to be, I guess.

12-4 , 44 feet per second

CONRAD Okay, I've got it go ahead and brake through

GORDON Brake through

CONRAD Brake it right down to 25.

GORDON Okay. Point 8 miles, 4800 feet.

CONRAD Think he is bright.

GORDON He sure is, isn't he.

CONRAD Fantastic

GORDON Those thrusters are popping.

CONRAD Yes. (garbled) oxygen is okay.

GORDON For awhile. Three quarters of a mile, 4500 feet

CONRAD What?

GORDON Three quarters of a mile.

CONRAD Yes. (garbled)

GORDON Their down to 40 feet.

CONRAD May I have one?

GORDON Here , here is mine.

CONRAD Never mind, never get them in the helmet.

GORDON Okay.

CONRAD (garbled)

GORDON Okay, point 6 miles

CONRAD Okay, better slow down a little bit.

GORDON Let me give you a range rate.

CONRAD What?

GORDON I'm going to give you a reading.

Boy is that bright.

CONRAD Yes.

GORDON 25 feet a second.

CONRAD Hey I want to slow down a little bit.

GORDON You are out in front of him just a little
bit.

Looks good.

CONRAD Hey let me know when we hit a half mile. He.

GORDON Yes sir.

Point 5 and you're half mile right now.

CONRAD Looks good.

GORDON 30 000 feet.

CONRAD Now he looks better.

Okay, I got 13 feet a second, I got 19 feet per
second - 19.

GORDON Hey, I'm going to slow it some more.

CONRAD Okay, point 4 miles, 2400 feet, 38

Okay point 37

GORDON What is the range rate?

CONRAD Zero miles ,

GORDON (garbled)

CONRAD We have to get it, we're quite a ways out

GORDON Okay.

CONRAD Repeat (garbled)

GORDON (garbled) take off nine.

25 - 1500 feet

CONRAD Okay, put the (garbled) ready.

GORDON Standby.

CONRAD That is about the brightest thing I've ever
seen. 16 feet a second,
5 feet a second.

GORDON She's (garbled) now.

CONRAD I'm going to hit him. I show a thousand feet.
Okay, I've got point 18, up 7.

GORDON Not quite a thousand here at 16.
Okay, 15 - 900 feet.

CONRAD I got them with the burn here.

GORDON Roger. (garbled) is all I've got.

CONRAD That's okay, its steady. Check the range.

GORDON At 14 you're not (garbled)

This is Gemini Control, 1 hour 24 minutes into the flight.
We have LOS at Hawaii. You heard onboard conversations between
Pete Conrad and Dick Gordon during this pass, As they performed
the braking maneuver in this rendezvous. We'll be acquiring
at the California station very shortly. We'll remote from
there to Houston and we'll standby for the air ground conver-
sation from the stateside pass.

END OF TAPE

This is Gemini Control. We are in acquisition at California and we will pick up that conversation.

S/C 240...Hawaii, we are here.

HOU Gemini 11, this is Houston at California, standing by.

S/C No MAPS... no MAPS.
We are not getting any MAPS back from the Agena. We tried to send a command to it earlier. We lost our radar (keying) ... angle on our rates are up and we never could ... the antenna. So we are not getting (keying)...(garbled) Get down here where I can see it. (garbled) Okay, ... angle now. (garbled)

HOU Gemini 11, Houston, did you get the ~~Acq~~ lights off? Over.

S/C No, we haven't turned them off yet. We will do that afterwards.

HOU Roger.

S/C (garbled) Okay, we are not getting MAPS, but the Acqlights did go off.

HOU Roger, understand. No MAPS, but the Acqlights went off.

S/C Roger, no MAPS, but the Acqlights went off.

S/C ...radar. Yes...where is the sun? Can you tell
me where sun.....(garbled) We have nothing on
the radar. ...get away from it. (Garbled)
Still 180 feet ...

HOU Guaymas remote, California local.

GYM Guaymas remote.

S/C what is your range rate? (Garbled)
It is 120 feet right now. You didn't find that
spot meter did you? No. (Garbled)....Yes.
....fuel. Houston, Gemini 11.

HOU This is Houston, go.

S/C We are station keeping at...

HOU Roger.

S/C (Garbled) What? very nicely done. Thank
you. (Garbled) Yes.Houston did you read
that? Houston? Hawaii? (Garbled) Houston,
Gemini 11.

HOU Roger, this Houston, go.

S/C Roger, TPI ..reads...

HOU This is Houston, Roger. Could you go on VOX?
You are pretty hard to read. Over.

S/C (Garbled)

HOU Could you put the mike away from your mouth a
little?

S/C How do you read us now, Houston?

HOU I read you loud and clear, Pete.

S/C How do you read me now John?

HOU Much better.

S/C Okay, we are station keeping, looking at the

S/C TDA. And... is six five percent.

HOU Roger, outstanding.

S/C ... would you believe M=1?

HOU Beautiful.

S/C John, tell Mr. Kraft, would he believe M=1?

HOU Roger. He believes it. Over.

S/C Say again.

HOU He believes it.

S/C How about that. We go for docking.

HOU Roger, could you send 050 beacons off and 010 S-band ~~off~~ before you dock? Over.

S/C You want .. and what else do you want?

HOU 050 beacons off and then 010 S-band beacons on.

S/C John, I sent them, but I don't get any MAP from it. Could you check it?

HOU Roger. It is okay and you are go for docking. Over.

Texas remote, Guaymas local.

TEX Texas remote.

S/C Houston, this is Gemini 11. .. turn the recorder...

HOU Roger, you can turn the recorder off. Over.

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S/C (Garbled) John, we are going to go ahead and
dock at this time.

HOU Roger, you are go for docking.

S/C We are docked...lights on.
Okay, postdocking checklist complete, main red
off, main green on. Secondary... is on. Secondary
... on. power is off (garbled) over.

HOU This is Houston, roger.

HOU Texas local.

TEX Texas local.

S/C ... 11.

END OF TAPE

S/C This is Gemini 11.

HOU Go ahead.

S/C Roger, we had some sort of a funny during the rendezvous, where we couldn't switch the antennas and on our third correction we had no azimuth or elevation. We still had our range and range rates but we did make the third correction based on Dick's backup. We're apparently getting maps now. This last one we just sent we got them in.

HOU This is Houston, roger.

S/C Houston, this is 11. I'm going to send the engine stop to armed and check the hardline connection, over.

HOU Houston, go ahead.

S/C All systems satisfactory, and our docked PQI reading is 55 percent.

HOU Houston, roger. That's just great, Pete.

S/C Thank you.

S/C ..CS update.

HOU Roger, that's a TX, over.

S/C TTX.

HOU Gemini 11, Houston. Check your O₂ pressure, over.

S/C Roger, we just turned the manual heater on.

This is Gemini Control, one hour, 40 minutes into the flight. We're still seven minutes and 4 seconds away from loss of signal at Antigua and we're continuing to stand by for air-ground transmissions during this pass. This is Gemini Control.

HOU Gemini 11, Houston. Over.

S/C Go ahead Houston.

HOU Roger, we cleared to turn the encoder off to get a tape dump, over.

S/C Roger, encoder off.

HOU Roger.

S/C We're gyrocompassing right at this time.

HOU Houston. Roger.

S/C Houston, Gemini 11.

HOU Go ahead.

S/C Roger.....propulsion on at this time.

HOU Roger.

S/C We're going to reentry command at this time.
Telemetry going to command at this time, Houston.

HOU Say again, over.

S/C Cutoff.

HOU Houston, roger.

GBI LOS GBI.

This is Gemini Control, one hour, 43 minutes into the flight. Gemini 11 is gyrocompassing the Agena and Gemini around to TDA south. That means that the crew will be looking

north at the completion of this gyrocompassing maneuver. The time on the docking one hour, 34 minutes, 18 seconds elapsed time and after docking, 56 percent fuel remaining. That's Gemini OAMS fuel. 56 percent remaining of the total of 904 pounds at liftoff. This is Gemini Control, one hour and 44 minutes into the flight.

HOU Gemini 11, Houston. Can you send 001 to get
the C-band beacon back on, over?

S/C Do you want 001 sent?

HOU That's affirm.

END OF TAPE

HOU Gemini 11, Houston. We're not going to dump
that tape. You can turn the encoder back on.

S/C Encoder back on.

HOU Gemini 11, this is Houston. Is your Apollo
camera still going, over?

S/C No. We turned it off after docking.

HOU Roger.

GTI LOS Grand Turk.

HOU Gemini 11, Houston. Over.
Gemini 11, Houston. Over.
Gemini 11, Houston. Over.
Gemini 11, Houston. Over.
Gemini 11, Gemini 11, Houston. Over.
Gemini 11, over.

S/C Roger, this is 11.

HOU Roger. Could you turn your manual heater off?
Over.

S/C Heater's just been turned off.

HOU Roger. Would you confirm that your encoder
was never off during that pass. Over.

S/C Affirmative. It was never off.

HOU Roger, thank you. Two seconds to LOS.

This is Gemini Control, one hour, 48 minutes into the
flight. We've had loss of signal at Antigua. We have a report
from the tracking station at Hawaii of a visual sighting of
the Agena, the Gemini 11 spacecraft and the second stage of

GEMINI 11 MISSION COMMENTARY, 9/12/66, 10:27 A. M. Tape 56,
Page 2

the Gemini launch vehicle as they passed over that station.

This is Gemini Control.

END OF TAPE

GEMINI 11 MISSION COMMENTARY 9/12/66, 10:37 AM TAPE 57, PAGE 1

This is Gemini Control 1 hour 54 minutes into the flight. And Gemini 11 is in contact with Ascension. We will stand by for any conversation during this pass.

ASC Ascension AOS.

S/C Hello Ascension, Gemini 11.

HOU Gemini 11, this is Houston at Ascension, over.

S/C (Garbled)

HOU Roger, you are nominal.

S/C Roger, will you send up the...?

HOU Roger. Did you find that spot meter? Over.

S/C If we ever bother to pick it out, we will find it.

HOU Roger.

S/C Houston, 11.

HOU Houston, go.

S/C (Garbled)

HOU Understand, D3 complete, over.

S/C Say again. Say again, Houston.

HOU Roger, understand D3 complete. Over.

S/C That is affirmative.

HOU Roger.

This is Gemini Control 1 hour 57 minutes D3 is the mass determination experiment which attempting to determine the mass of the Agena by thrusting against it with the spacecraft and reading

GEMINI 11 MISSION COMMENTARY, 9/12/66, 10:37 AM TAPE 57, PAGE 2
out some numbers on the computer. This is Gemini Control. We
still have about 3 and a half minutes left in the Ascension pass.
We will continue to stand by for any transmissions.

HOU Gemini 11, Houston. Over.

S/C Go ahead, Houston.

HOU We have a nodal update for you, if you have
time to copy? Over.

S/C Wait one second and I will be with you. Go
ahead, we are ready to copy.

HOU Roger, nodal update, 02 plus 37 plus 31 for rev 2
136.1 degrees east, 1 hour 49 minutes right
Ascension.

S/C Roger. Would say again....?

HOU Roger, it is 136.1 degrees east and 1 hour and
49 minutes right Ascension.

S/C Roger. ...

END OF TAPE

This is Gemini Control, two hours, 10 minutes into the flight and we're just about to acquire Gemini 11 at the Tananarive station. At the time we acquire Gemini 11 should be undocked or in the process of undocking from the Agena in order to perform the S-26, Ion-Wake Measurement Experiment. In this experiment ion detectors located aboard the Agena will be used in an attempt to measure the wake of the spacecraft as it is maneuvered in the vicinity. It is believed that orbiting spacecraft makes a wake through ions just as a boat does through water and this experiment will measure and determine this. S-26 will be continued throughout the Carnarvon pass also which follows the Tananarive pass. We'll stand by through the Tananarive pass for any voice conversations from the crew. This is Gemini Control.

Tananarive remote.

TAN Tananarive remote.
HOU Gemini 11, Houston at Tananarive, standing by.
S/C Roger. Be advised we've undocked and we're
 just commencing S-26 at this time.
HOU This is Houston, roger.
HOU Gemini 11, Houston. One minute to LOS.

This is Gemini Control, two hours, 17 minutes into the mission. We've had loss of signal at Tananarive now. The Flight Surgeons here in the control center, Drs. Berry and D. Owen Coons report that the heart rates on the pilots during the rendezvous and docking sequence; Pete Conrad, the

GEMINI 11 MISSION COMMENTARY, 9/12/66, 10:52 A. M. Tape 58,
Page 2

Command Pilot, averaged around 120 and Dick Gordon, the Pilot,
110. This is Gemini Control.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 9/12/66, 11:09 AM TAPE 59, PAGE 1

This is Gemini Control 2 hours 26 minutes into the flight.

Gemini 11 just acquired at the Carnarvon, Australia station.

Still in the process of the S-26 Ion-Wake Measurement Experiment. Has completed one portion of it and is now proceeding to the second portion. We will pick up the conversation at the start of this pass now.

CRO Go ahead, Carnarvon.

S/C Go ahead Carnarvon.

CRO Would you place quantity read to ECSO2?

S/C Roger, ECSO2. (Garbled)

CRO Roger.

S/C Say hello to everybody down there for me.

CRO Sure will.

Will you go to H2?

S/C Roger, go to H2.

CRO Go ahead and start the purge.

S/C Roger, we are ready to start.

CRO Go ahead.

HOU Carnarvon, Com Flight.

CRO Go ahead Com Flight.

HOU That is okay, we will dump it over Hawaii.

How is the purge going?

CRO He has just started the purge.

HOU Okay.

CRO He is purging H₂, section 2.

HOU Hello Carnarvon.

CRO Go ahead.

HOU Stand by and we will transmit TX.

CRO Roger, stand by.

HOU Carnarvon, Com Flight.

CRO Go ahead Flight.

HOU Better check that O₂..

CRO Roger, go ahead, Flight.

HOU Better check that O₂ pressure.

CRO Quantity meter is setting about 630.

HOU Did you say 69 zero, Carnarvon?

CRO 630.

HOU Roger. Carnarvon, Com Flight.

CRO Go ahead.

HOU Give us a Gemini main.

CRO Roger.

HOU Can you tell if his manual heater is on?

CRO That is affirmative. It is on.

HOU Roger.

CRO One minute until LOS.

S/C Roger...

HOU Roger.

CRO That O₂ is up to 660 now, Flight.

GEMINI 11 MISSION COMMENTARY, 9/12/66, 11:09 AM TAPE 59, PAGE 3

HOU Roger.

This is Gemini Control 2 hours 32 minutes into the flight. And we are out of acquisition at Carnarvon now. The next station to acquire will be Hawaii at about 2 hours 51 minutes elapsed time. This is Gemini Control.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 9/12/66, 11:20 a.m. TAPE 60,
PAGE 1

This is Gemini Control, 2 hours 37 minutes into the flight. Gemini 11 is passing off the coast of New Guinea on the nightside of its second revolution. Pete Conrad and Dick Gordon still performing the S-26 maneuver at this time. Out of range of any tracking stations, the next station to acquire will be Hawaii, in about 12-1/2 minutes. This is Gemini Control.

END OF TAPE

This is Gemini Control, 2 hours 50 minutes into the flight. Gemini 11 due to acquire at Hawaii any second now. Pete Conrad and Dick Gordon scheduled to still be performing the S-26, Ion-Wake Measurement experiment during this pass. We'll bring you th conversation, air to ground conversation from the beginning of this pass now.

S/C We are ready to dump the tape. We have S-26 mode D sequence 1 in - excuse me 2 and 3.

HAW Roger.

S/C Okay, it's S-26 Mode D sequence 1 and sequence 2.

HAW Okay, copy that. Confirm that your encoder is off.

S/C Encoder off.

HAW Roger, we'll get tape dump.

HOU Hawaii from Flight.

HAW Go ahead Flight.

HOU Both vehicles GO.

HAW Roger both vehicles are GO. We've got 780 on O₂ pressure.

HOU Roger. Are you getting a tape dump?

HAW That is affirmative.

HOU Hawaii.....main.

HAW Roger

HAW Eleven, Hawaii, we're sending TS.

S/C Okay. Standing by.

HOU Hawaii from Flight.

HAW Go ahead.

HOU Did we get a PQI?

HAW Negative I didn't get it. Do you want one?

HOU Say again.

HAW Do you want a PQI?

HOU Affirmative.

HAW Roger.

Eleven, Hawaii. Will you give me a propellant quantity readout please?

S/C Roger. Propellant quantity is - it's about 49 for the - 50 percent something like that, 49 aft.

HAW Copy.

S/C We're getting more efficient as we go along here.

HAW Yes, I notice that. How is our weather over Hawaii.

S/C We're in the BEF mode aligning the platform right now. There is a great deal of cloud cover there over the Pacific. I see a rather large cloud cover to my left which would be to our south, maybe it's one of those Francesca or Gretchen or somebody.

HAW Okay.

S/C Let us know when you get the tape dump. We'd
like to press on with the S-26.

HAW Roger, will do.
Flight, Hawaii

HOU Go ahead Hawaii

HAW We've been noticing a slight decrease on the
Agena ACS reg low pressure, DO57, it's 3.68
psi. It was up above four I think, at some....

HOU Roger

HAWreadings in the past.

S/C Hawaii, eleven.

HAW Go ahead.

S/C Now ask them back there at MCC at the Cape,
if Neal is around, if he ever saw the paint all
blistered off the side of the AGena. We've got
a great deal of paint off and then it also looks
like it has some sort of anodized - anodizing done
to it or something. I was just wondering in all
the night phase keeping in front of it if we
didn't put our fuel on it.

HAW Ok fine, we'll try to find out that for you.

Incidentally we are through with tape dump, you can
^{put}
/ your encoder back on.

S/C Okay, back on.

HAW Flight, Hawaii

HOU Go ahead.

HAW Roger, did you copy that conversation?

HOU Affirm, we're going to check.

HAW OK.

HAW Flight, Hawaii

HOU Go Hawaii.

HAW Roger, we're showing a cabin pressure now of 4.98.

It has been running a little higher than that.

HOU Roger.

Hawaii, AFD.

HAW Go

HOU That is just a low regulation point on the regulator.

HAW Roger.

This is Gemini Control, 2 hours 59 minutes into the flight.

We've had loss signal at Hawaii now, but will acquire at
California within the next minute. We'll continue to standby
for air to ground transmissions during the stateside pass.

This is Gemini Control.

CAL California is remote.

HOU Gemini 11, this is Houston at California.

S/C Roger, this is 11. We're running S-26, sequence
03.

END OF TAPE

HOU Houston, roger.

S/C Houston, these values that we're doing are all part of S-26 and I have ...18 inches.....at this time. And I can also see the flame reflection of the forward firing thrusters in the TDA.

HOU Houston, roger.

S/C Houston, Gemini 11.

HOU Go ahead.

S/C Hey, John, did you know the paint blistered on your Agena? Over.

HOU Roger. There was some paint blistering on it.

S/C Roger. A bunch of.... near the TDA window. All the main paint is blistered I think.

HOU Roger. I'd like to get some pictures of that, over.

S/C Oh, we've got some. It's also got a deposit on the unpainted surfaces that looks like fluff....like anodize, you know, some sort of oxidize..

HOU This is Houston. Roger, we agree with that.

S/C I'm finally getting a little braver here doing my station keeping in pulse and it seems to be pretty economical.

HOU Houston, roger.

Guaymas remote, California local.

CAL California local.

HOU Guaymas, Houston. Are you remote?

GYM This is Guaymas. We are remote.

S/C Houston, this is 11. We'll be ready to report
to ... remote in about 61 seconds.

HOU Houston, roger. 61 seconds.

S/C Say, Houston, this is 11. We ran our voice
tape for the hour and we never did get a light
and I'm not exactly sure that it's working at
all. We just put a new tape in for S-26 and
I'll check in when we have a few minutes but
I think we've lost our voice tape.

HOU This is Houston, roger.

S/C Houston, 11.

HOU Houston, go.

S/C They just got tape dump in from Hawaii. Does
the S-26 data look any good?

HOU They've got data from Carnarvon. Carnarvon
data looks pretty good.

S/C Okay. I just want to make sure that we're
checking it in the right place.

HOU Roger. I have an Agena docked update burn for
you, if you're ready to copy.

S/C Ready to copy. Oh, wait a minute. He dropped
his pencil. Okay, we're ready to copy.

HOU Roger. Purpose calibration burn, GETB 4 + 28
+ 32. Delta V, 104.4. Delta TB, 1 + 28.

S/C John, we're not getting you. You cutoff. We
got the 1 + 28, that's it.

HOU Roger. The purpose: plane change. GETB 4 +
28 + 32. Delta V, 104.4. Delta TB is 1 +
28. Address 27, 01 04.4. PPS burn, over.
TDA north.

S/C Gemini 11, understand. Plane change, 4 +
28 + 32. Delta V, 104.4. Duration 1 + 28.
Address 27, 0104.4. PPS burn, over.

HOU That is affirmative. This is Houston, that
is correct.

S/C Roger.

HOU Gemini 11, Houston. Will you give us a call
on UHF no. 2, over?

S/C Roger, going to UHF no..2.

HOU Roger.

END OF TAPE

HOU Houston, Gemini 11, over.

S/C Go ahead.

HOU Roger, we want to check and make sure your refrigerator on the S-4 blood package is working. Can you check it by feel and see if it is cold? Over.

S/C The outside of the package feels like it is ... into it. It is warm.

HOU Roger.

S/C However, the handle is cold. It is quite cold. So I am sure the refrigeration is working.

HOU Roger. That indicates the refrigerator is working. Can you guys move those mikes away from your mouth. I think that is part of our problem on communications. Over.

S/C How do you read us now?

HOU That is a little better. Try a little further away.

S/C Roger. About 2 inches. We will be better when we get our helmets off and get over in Hawaii ...

HOU Roger. That is much improved over.

S/C Okay....

HOU That is pretty scratchy.

S/C Say again.

HOU That is a little better.

S/C Roger.

HOU Texas local.

Gemini 11, Houston, can you turn your velocity -
your encoder off for a velocity meter load?

S/C Roger. Encoder off. This is Gemini 11.

HOU Houston, go.

S/C ..we are through with the S-26, we are going
to ahead with our forward docking... and you
can help me...anything you want to.

HOU Roger. 11, this is Houston. We are taking
a tape dump and doing a timer reset right now.
Over.

S/C Okay...

HOU Houston, Gemini 11. Your velocity meter is
loaded and the load is good.

S/C Roger.

ANT LOS Antigua.

GTI LOS, GTI.

HOU Gemini 11, Houston. Over.

S/C Go ahead, Houston.

HOU Roger, did you get any MAPs when you undocked?
Over.

S/C Roger, we have to be right on top of it to get
a MAP. We are 78 feet away, we don't get MAPs
through our radar. I don't know what the problem
is, but... close to... we get radar, why we get

S/C a MAP.

HOU Houston, roger.

S/C We are about to record a first here. The pilot
is about to dock.

HOU Roger.

S/C Houston, 11.

HOU Go ahead.

This is Houston, go ahead.

S/C Roger, mark one docking for Richard Gordon.

HOU Roger, we chalked that one up. One for the
right seaters.

S/C Say again.

HOU One for the right seaters.

S/C Can't understand you.

LOS

HOU Gemini 11, this is Houston, over.

S/C Go ahead.

HOU Roger, you can turn your encoder back on. The
tape dump is good.

S/C Encoder coming on.

END OF TAPE

HOU Eleven, this is Houston. One minute until
LOS

S/C Roger Houston. We're right on the flight
plan, reading and complete so far and we'll
trudge on.

HOU Houston, Roger.

S/C PQI is 46 percent fuel remaining.

HOU Houston, Roger.

This is Gemini Control, 3 hours 22 minutes into the flight.
We've lost acquisition at Antigua. As you heard Dick Gordon
has performed a docking, the first time in the Gemini program
that the pilot has docked. They'll stay docked about five
minutes and then undock again and perform more of the Ion-
Wake measurement experiment. We expect to pick them up at
the Rose Knot tracking ship within about two minutes and
we'll standby for the conversation over that station. This
is Gemini Control.

END OF TAPE

This is Gemini Control, 3 hours 24 minutes into the flight. We are within range of the Rose Knot, we'll standby for air to ground transmission there and then the Ascension station overlaps the coverage of the Rose Knot and we'll keep standing by through the Ascension pass for any conversation between the crew and Cap Com. This is Gemini Control.

HOU RKV Cap Com, Houston Flight.

 RKV Cap Com, Houston Flight.

RKV Flight, RKV.

HOU Reading you very weak.

RKV We have some problem and we'll.....

HOU Can not copy.

RKV Roger.

RKV Gemini 11, RKV Cap Com.

S/C Hello, RKV.

RKV Roger, will you turn the encoder off please, we'd like to run a tape dump.

S/C Roger encoder is off.

RKV Roger, thank you.

RKV Houston Flight, RKV can you read me?

HOU Go ahead.

 Go ahead RKV.

RKV Roger. We're showing a PDP leading by something like approximately 4 hours, 4 hours 33 minute and 05 seconds.

HOU PDP is leading.

RKV That is affirmative. PDP is leading.

HOU Roger.

RKV Okay, and also DCS control valve out put primary is reading 50 degrees, secondary is reading 50 degrees also. We have switched PM stations completely here to confirm that it is nothing (garbled)

HOU Say those again.

RKV Roger, DCS control valve out temp primary 50, secondary 50.

HOU Then there is a summary.

RKV Okay, and be advised Flight that VM is presently showing all ones, presently showing all ones.

HOU Understand VM showing all ones.

RKV That is affirmative.

HOU Roger.

RKV Gemini 11, RKV. We'll have LOS shortly would you turn the encoder back on we're through the tape dump. Thank you.

S/C Roger, encoder is back on and we've (garbled)

RKV Roger, understand, on the flight plan.

RKV RKV has had LOS.

HOU Gemini 11, this is Houston at Ascension standby.

S/C Okay, Houston. We're just cooking up a little lunch here.

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PAGE 3

HOU Roger.

END OF TAPE

HOU Gemini 11, Houston. One minute to LOS.

This is Gemini Control, three hours, 36 minutes into the flight. The ground elapsed time for that redocking by the pilot, Dick Gordon was three hours, 19 minutes, 20 seconds. Three hours, 19 minutes, 20 seconds. This is Gemini Control.

END OF TAPE

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This is Gemini Control 3 hours 46 minutes into the flight.

Gemini 11 just about to acquire Tananarive in the night side of its third revolution. As we acquire Tananarive, Gemini 11 should be undocked and performing the linear portion of the Ion-Wake Measurement Experiment. This portion they translate back and forth in a straight line as opposed to the transverse translations they were making in the earlier portion of this experiment. We will stand by now for air-to-ground transmissions at Tananarive. (PAUSE)

This is Gemini Control at 3 hours 53 minutes into the flight. We have had no further word from Pete Conrad about the onboard tape recorder problem. There was an indication that we may have lost some of the onboard tape conversation. He said that when he got a little more time, he would take a look at it and try to verify that. He has not had time to do that since discussing it. A check with the Environmental Control Systems Officer here in the Control Center shows that the Environmental Control System valve temperature, the 50-degree temperature referred to in the air-to-ground a little bit earlier, is not an abnormal reading. He says we saw those temperatures in Gemini 10. He does not consider it a problem. We may have a clock problem on the Agena. There is some indication that the Agena clock has jumped 4 hours. Continuing to take a look at this to verify that. If it has jumped it will not impact or effect the spacecraft flight plan in any way, as long as we have the crew up there, they will be able to perform Agena maneuvers without use

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of the clock. Will not interfere with the docked burns. The only problem that could arise, and this is not verified yet, but it could be a problem after the spacecraft separates finally from the Agena and we want to use the clock to perform Agena maneuvers. We may have a problem at that time, but the Agena systems officer will continue to monitor this and he says it will not interfere with the spacecraft portion of the flight plan. This is Gemini Control.

END OF TAPE

This is Gemini Control, four hours, nine minutes into the flight. Gemini 11 is just about to be acquired at the Coastal Sentry tracking ship off the coast of Japan. We'll stand by for the transmission at this pass.

CSQ Okay, Flight. The Agena and Gemini are yawing around at this time.

HOU Roger.

CSQ Cryo O₂ is showing about 640 on the meter.

CSQ Gemini 11, CSQ standing by.

S/C CSQ, Gemini 11..... for TDA north.

CSQ Roger, we're watching you come around.

S/C Be advised

CSQ Roger, I'm sending you a TX at this time.

S/C Roger.

CSQ Gemini 11, CSQ. Could you turn your encoder off so you can get a tape dump, please?

S/C Encoder off.

S/C CSQ, we still have about two minutes to LOS.
I guess.....

CSQ Roger. I'll give you a GT time hack at this time.

S/C Go ahead.

CSQ Okay, in about 20 seconds it will be four hours and 13 minutes. 3, 2, 1, Mark. Four hours and 13 minutes.

S/C Roger, we're with you.

CSQ Okay, 11, CSQ. Would you turn your manual
heater on and bump that O₂ pressure up a little,
please?

S/C Roger, it's on.

CSQ Houston Flight, CSQ Cap Com.

HOU Go ahead.

CSQ Okay, both those ECS control valve temps are
down around 40 degrees.....

HOU Roger. How's your V_M check?

CSQ Say again.

HOU Did you check the V_M load?

CSQ Your V_M load is okay.

HOU Roger.

CSQ We're getting an Agena tape dump at this time.

HOU Roger. How about TDT?

CSQ Houston Flight, CSQ Cap Com.

HOU Go ahead.

CSQ Okay, that tape dump is going to run over our
LOS. Do you want us to shut it off at LOS?

HOU That's affirmative.

CSQ Roger.

CSQ Gemini 11, CSQ. One minute and a half to LOS.

S/C Roger. How about relaying to Houston that on
the last docking we turned the radar off....
get a lock.....

CSQ Could you say again. I couldn't read you.

S/C Roger. Using the radar we lock on the
Agena but we couldn't send commands to.....

CSQ Roger, understand.

CSQ Gemini 11, CSQ.

S/C Go ahead.

CSQ Go for your PPS burn.

S/C Roger.

S/C CSQ, 11.....

CSQ Stand by, 11.

CSQ Okay, 11, you can turn your encoder back on.

S/C Encoder on.

HOU CSQ, Houston flight.

This is Gemini Control at four hours, 17 minutes into the flight. We have lost signal at the CSQ now. As you heard the crew was given a go for the Agena primary propulsion system burn. This will take place over Hawaii. It will be an out-of-plane burn to the north about 104 feet per second. This is a calibration burn or a confidence burn prior to the big maneuver later in the flight with the main Agena engine. There should be no large change in the orbit because of this burn. It may change the inclination by about two tenths of a degree but no more than that. This is Gemini Control.

END OF TAPE

This is Gemini Control, 4 hours 27 minutes into the flight.
We have just acquired Gemini 11 at Hawaii. We'll bring you
this pass from the start now.

HOU Roger, we confirm that.

Confirm camera on.

S/C Roger camera is on and sump tank cameras are on.

HOU Roger.

HAW SPS initiate.

HOU Roger.

HAW Go to burn.

HOU Say again.

HAW We saw the burn.

HOU Roger.

HAW We're showing an O_2 to water on section one delta P.

HOU Looks like the ascent phase.

S/C Okay ground, it looks like on my IVI's, 111 forward,
4 right, and 3 up. Ground copy.

HAW Roger, we copied that.

S/C Address 80, 110.4.

HAW Give me again on 80.

S/C 80, 110.4.

HAW Okay, copy that.

S/C Address 81, is a minus 2.7.

HAW Copy.

S/C Address 82, is minus 3.3, over.

HAW Roger we copy that.

S/C We have main engines on, we have 57 seconds remaining. Secondary propulsion we have 3 plus 31, over.

HAW We copy that also.
Delta P light went off.

HOU Roger.
What are you showing?

HAW On attitude test.

S/C Attitude test reads about 73 percent.

HAW Thank you.

HOU Send us an OBC Hawaii.

HAW Roger.

HAW Flight, Hawaii

HOU Go ahead.

HAW We're showing a CS partial pressure of 3.5 millimeters
and

HOU 3.5

HAW That is affirmative.

HOU Hawaii from Flight.

HAW Go ahead

HOU Send us another main.

HAW Roger.

HAW LOS all parameters.

This is Gemini Control, 4 hours 35 minutes into the flight.
We've had LOS at Hawaii. We'll pick up at California in less
than a minute and we'll continue to standby through the
stateside pass. This is Gemini Control.

HAW Gyrocompassing on.

HOU Roger

HAW The flight plan indicates gyrocompassing on for the
retro burn, so I guess they didn't send it.

CAL California is remote.

HOU Gemini 11 this is Houston at California over.

S/C Hello Houston, Gemini 11 here. Go ahead.

HOU Roger, you're about to get off your nominal flight
plan.

S/C Why?

HOU Well you can't do S-29 because the vibration
points moved the Milky Way, right?

S/C We got later word that you - we were going to do a
gegenschein photography instead of the S-29. They
should have told you about that on the ground (garbled)
and they are suppose to (garbled) the time of the
exposure. We have the (garbled) coming in ready and
we are setting up to BECO right now and so we need
the exposure times.

HOU Roger, that is good. Have the data for you
right now. At 5 hours 11 minutes and 3 seconds.

END OF TAPE.

HOU Supposed to take the pictures with the S-29 equipment, take a picture of the Gegenschien, pitch 17 degrees up at sunset. Then Comet Barbon near the Gegenschien. The second picture, then the third picture is Comet Kilston. They are out there. And sunset is 5 hours 11 minutes 3 seconds. Over.

S/C Roger, we copy. Sunset 5 hours 11 minutes 3 seconds and I think we need ... Gegenschien.

HOU Roger.

S/C We also need exposure time on film. ...John on that PPS, that is the biggest thrill we got yet.

HOU That baby really moves, doesn't it.

S/C It was a shock boy, it was like going off a catapult. John, after all, you are supposed to monitor the (garbled)

HOU Roger.

S/C And be advised...total velocity ...

HOU Roger.

S/C (Garbled)

HOU Roger.

HOU Guaymas remote, California local.

GYM Guaymas remote.

CAL California local.

HOU Texas remote, California local - Guaymas local.

TEX Texas remote.

GYM Guaymas local.

S/C This is 11.

HOU Houston, go.

S/C ...windows got so dirty, but both our windows are really dirty. It is twice as dirty as they were on Gemini 5. And we had the window covers. I don't understand it.

HOU Roger. You got one right now?

S/C Say again.

HOU You - before or after the PPS burn, over.

S/C I can't hear you.

HOU Was it during the PPS burn that they smudged up.

S/C No. They have been smudged up ever since we jettisoned the covers. As soon as I got rid of the covers - it seems as soon as I got rid of the covers the windows were dirty. Now, that could have been my imagination. It could have been dirty already. But whatever it was must have come off ... because they were dirty just as soon as we jettisoned the covers.

HOU Roger. Gemini 11, Houston, you do have exposure times for the Gegenschien and the comets, don't you?

HOU Gemini 11, Houston. Over.

Gemini 11, Houston. Over.

S/C Go ahead, Houston.

HOU Roger. You do have exposure time for the
Gegenschien and the comets don't you?

S/C Wait a moment and let me look in the book.

HOU Roger, they are in there. And -

S/C Okay, we got the time.

HOU And at 5:26 Comet Kilston point commands is yaw
143 degrees left and 16 degrees up. Over.

S/C Yaw 143 degrees left.

HOU 143 degrees left and pitch 16 degrees up. Over.

S/C Yaw 143 degrees left and pitch up 16 degrees
and that is at 5:26 plus 40.

HOU Roger. That is yaw 143 degrees left. One hundred
and forty-three degrees left.

S/C Okay, I got it. You were fading in and out for
some reason.

END OF TAPE

This is Gemini Control, four hours, 59 minutes into the flight. Gemini 11 is over South America. It's just begun its fourth revolution and is coming within range of the Rose Knot tracking ship now. We'll stand by for air-to-ground transmissions over that station.

This is Gemini Control, five hours, one minute into the flight. There's been no conversation yet over the RKV. We'll continue to stand by. This is Gemini Control.

S/C Okay, RKV, be advised that we've got the ...

.....

RKV Roger, understand.

HOU RKV Cap Com, Houston Flight.

RKV Cap Com, Houston Flight.

RKV We have the tape dump on the Agena. You can turn the encoder back on, please.

S/C Roger, encoder coming back on at this time.

HOU RKV Cap Com, Houston Flight.

... Got a report..... on conference.

RKV Gemini, RKV. We'll have LOS shortly.

HOU Gemini 11, Houston here.

RKV Roger, Houston. RKV again. We're pitching up to

HOU RKV, Houston Flight.

END OF TAPE

This is Gemini Control, 5 hours 9 minutes into the flight. Gemini 11 is out of range of the Rose Knot now. Beginning to perform the astronomical photography, photographs of the gegenschein, the comet Barban, the comet Kilston. The next station to acquire will be Tananarive at an elapsed time of 5 hours 21 minutes 21 seconds. The crew will be busy with the photography at that time also but we will come up again at Tananarive and standby for any conversation during that pass. This is Gemini Control.

END OF TAPE

This is Gemini Control, 5 hours 21 minutes into the flight.
Gemini 11 is within range of Tananarive. John Young just
put in a call to the spacecraft, we'll listen to this pass.

S/C I'm getting ready to go for the comet.

HOU Roger.

S/C There was a real wrestling match with that camera
but we got it all together.

HOU This is Houston, sometimes its that way.

S/C Houston, 11

HOU Go ahead, over.

S/C Gegendchein is complete, we're on our way over to
the comet.

HOU Roger.

Understand that comet Barban is near the gegenschein,
over.

S/C Okay, it probably is in the same photograph with it.

HOU Roger.

This is Gemini Control, 5 hours 25 minutes into the flight.
We're continuing to standby at Tananarive. The Flight Surgeon,
Dr. D. Owen Coons, reports that the heart rates during the
primary propulsion system burn, the Agena main engine burn,
approached those seen during rendezvous and docking. Conrad
up near 120 and Gordon about 110. We'll continue to standby
through this Tananarive pass. This is Gemini Control.

CSQ AFD, CSQ Cap Com.

HOU CSQ Cap Com, AFD on conference.

CSQ Got it, AFD on conference.

HOU Roger.

Put CSQ on here please.

CSQ AFD, CSQ Cap Com.

HOU Go ahead CSQ.

CSQ Gota question for you on this pass coming up.

HOU Go ahead.

CSQ Okay, the Agena work schedule calls for a tape dump however, flight plan does not, which is correct?

HOU Okay, Agena says no tape dump.

CSQ Say again.

HOU No Agena tape dump.

CSQ Roger, no Agena tape dump.

HOU Roger.

S/C Roger, one minute to LOS. The comet photographs are complete, we're going to TDA forward spacecraft TEF at this time.

HOU Roger.

This is Gemini Control, 5 hours 30 minutes into the flight. Gemini 11 has passed out of range of Tananarive. The next station to acquire will be Coastal Sentry Quebec at 5 hours 44 minute 4 seconds. This is Gemini Control.

END OF TAPE

This is Gemini Control 5 hours 44 minutes into the flight. And Gemini 11 is coming up on tracking ship Coastal Sentry. Gemini 11 in its fourth revolution now. We will stand by for any air-to-ground conversation over this tracking ship.

CSQ vehicle, both vehicles are go.

HOU Roger.

CSQ Gemini 11, CSQ Cap Com.

S/C Hello CSQ, Gemini 11.

CSQ Roger, we have you go on the ground here. Send your TX.

S/C Thank you...here. We have completed everything and we are restowing.

CSQ Roger.

CSQ Houston Flight, CSQ Cap Com.

HOU Go ahead.

CSQ Okay, we are showing him in deadband roll at this time. Do you want him to go to Hawaii?

HOU You are showing deadband low? Stand by.

CSQ Deadband narrow. That is affirmative.

HOU Deadband narrow? What is flight control mode?

CSQ According to our flight plan, indicates it should be off at this time. However, it is showing on.

HOU CSQ Cap Com, Houston Flight.

CSQ Go ahead.

HOU You might check that with him. That is command
 451 deadband wide.

CSQ Roger. 11, CSQ.

S/C Go ahead.

SCQ Okay, we notice you have got deadband narrow.
 Send command 451.

S/C Roger.

CSQ Have you sent ACS gain low command 460?

S/C Roger.

CSQ Okay Flight, CSQ. He is in flight control mode 1,
 heading 000.

HOU Roger.

CSQ Gemini 11 CSQ. About a minute until LOS.

S/C Roger, how do we look?

CSQ You are looking real good on the ground.
 You still have your L-band on.

S/C Say again?

CSQ We show you still have the L-band on. Send
 command 070.

S/C Roger. CSQ, this is Gemini 11, command pilot
 let me see if we can get a volume we can accept.

CSQ Do you read me loud and clear?

S/C Roger we can read you.

END OF TAPE

This is Gemini Control, six hours, two minutes into the flight. Gemini 11 just about to acquire at Hawaii. The crew, Pete Conrad and Dick Gordon, have stuck very close to this flight plan, in fact, have been running ahead by a few minutes on some of the items, but have never been behind. The last experiment performed was the Astronomical Photography, during this last nightside pass which ended about five hours, 45 minutes elapsed time. We hear them talking to Hawaii now. We'll stand by for that conversation.

HAW Crew status report.

S/C We have that in the flight plan.

HAW Okay. 08:00:00, purge fuel cells section 2 then 1.

S/C Roger.

HAW I'd like to ask you a couple of questions if you've got a minute.

S/C Go ahead.

HAW Okay. This is in regards to the L-band problem you had there in the S-26 where you mentioned something about you didn't have L-band lock but you sent commands and you verified the commands or something like that. Can you explain that a little bit?

S/C Roger. We had no lock light and the radar was not locked on but when we sent the commands, we'd get a map.

HAW Okay.

HAW How about that?

S/C Yeh, that's what I say. How about that?

There's a little more to that story too. When we undocked the second time I used the hard-light switch and after we came back into the docking position we did not have a docked light. I don't believe so I turned the radar on and set 220, got a map and got a dock light, but we never did get a radar lock on light.

HAW I see. Evidently you weren't squeezed in there good enough.

S/C Yeh, could be.

HAW Okay, someone somewhere copied you had a little bit of problem with your down thrusters during your terminal phase maneuvers. Did you?

S/C I kind of had the impression that when I was firing down I was getting intermittent firing but I can't prove that.

HAW Okay.

HOU Hawaii from Flight.

Hawaii Cap Com, Houston Flight.

Hawaii Cap Com, Houston Flight.

Hawaii Cap Com, Houston Flight.

HAW Go ahead.

HOU Ask him if the pilot noticed anything about

the thruster while he was docking, for example.

I don't know whether he had occasion to use
that thruster. Do you follow me?

HAW Roger.

HOU With his controller?

HAW ll, Hawaii.

S/C Go ahead.

HAW Roger. You might ask Dick while he was trying
his docking practise if he used that down
thruster any.

S/C We haven't noticed it recently on that thing.
It seems to be okay at this time.

HAW I see. Did you use that down thruster any,
Dick, when you tried your docking?

S/C Yeh, I sure did. I didn't want to say anything
wrong with it. I think Pete's is all right
now too.

HAW Oh, I see. Okay, we thought maybe it was in
one of those controllers.

S/C We're correcting line of sight rates and I was
-you know,
firing ~~long~~ two or three second or four second
bursts out of it and I thought I could hear
it firing intermittently. It could have been
the rate command system but it just sounded
different to me. It sounded like I was getting
it steady.

HAW Okay.

S/C You know, all the docking work and station keeping and everything, it's just been limited and it's always fired for us.

HOU Copy.

HAW Okay, we copy that.

S/C Hawaii, 11.

HAW Go ahead.

S/C We have powered down per the flight plan.

HAW Roger. We were monitoring all that down here.

S/C Okay.

HAW All your systems look terrific.

S/C Okay, and PQI is 43 percent fuel remaining.

HAW Thank you.

HOU Hawaii from Flight.

HAW Go ahead.

HOU Send us another main and confirm their pump configuration as per the flight plan.

HAW Roger it is.

HOU Roger.

HAW Primary A, secondary B.

HOU Roger.

HAW 11, Hawaii. We have one minute to LOS. Standing by.

S/C Roger. Roger.

HAW Caught both of you on that one.

S/C Well, he's mixing and I'm talking..
HAW We have received tape dump.
HOU Roger.
HAW LOS all parameters. All systems go at LOS.
HOU Roger, Hawaii.

END OF TAPE

This is Gemini Control 6 hours 36 minutes into the flight.

Gemini 11 is over South America. They have just started their fifth revolution, is about to be acquired by the Rose Knot tracking ship. Another docking practice is scheduled from 6 hours 45 minutes to about 7 hours elapsed time. This is between RKV and Tananarive acquisition. However, if the crew is still running a little ahead on their flight plan, we may be able to pick up some of this on this RKV pass. We will start this pass at RKV from the beginning, now.

RKV 235, 235.

Flight, did you copy?

HOU 235 on which?

RKV On cryo, roger.

HOU Which one?

RKV ..valid indicator on. Do you want them both,
or what?

HOU Both of them.

RKV Roger, 11, RKV.

S/C Go ahead.

RKV Roger, did you place your quantity read switch
to the O₂ position please?

S/C Thank you.

RKV 235 on O₂.

S/C Roger.

RKV Okay, would you place to H₂ please?

S/C Roger.

RKV H₂ is 252. 252.

S/C Copy.

RKV 11, I have a PLA update for you when you are ready to copy. That will be block two.

S/C 11 ready to copy.

RKV Roger. Area 8-3 11;48;13;21 plus 29 27 plus 40 roll left 58, roll right - say again, roll left 85, roll right 95. Area 9 Delta 12 44 33 20 plus 27 25 plus 54. Roll left 85, roll right 95. Area 10-2 14 17 510 20 plus 20 25 plus 54. Area 11-2 15 53 24 20 plus 18 26 plus 00. Area 12-2 17 31 41 20 plus 31 26 plus 23. Area 13-1 18 57 12, 20 plus 18, 26 plus 13. Area 14-1 20 32 55, 20 plus 35, 26 plus 43. Last one area 15-1 22 08 15, 20 plus 51, 26 plus 57. Bank angle for all areas is roll left 85, roll right 95. Weather is good in all areas and they all include SEP maneuver. Over.

S/C Gemini 11, roger copy.

RKV We have nothing else for you at this time. We are standing by.

S/C Roger. We have switched back to off.

RKV Roger,...dump please?

S/C RKV, this is 11. I would like you to pass
to Houston that the windows are so dirty that
prior to EVA, we would like to have permission
to try and clean the windows.

RKV All right, stand by one, we will see they say.

S/C They can think it over for the night and let
us know tomorrow - interruption -

HOU We will think it over --

S/C The windows are so dirty we would like to do
something about them.

RKV Okay, Flight copied that and will give you the
information tomorrow.

S/C Fine.

RKV Carnarvon, RKV, we will have LOS in about a
minute.

CRO Roger, we are getting ready to have the pilot
do his night undock and dock. Over.

RKV Roger. Flight, we saw a MAP of the command
that he sent.

HOU Roger.

RKV He has his L-band on.

HOU Roger.

RKV We are having LOS at this time.

HOU Roger.

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RKV And we have indications that they have turned
 their recorder on the Agena on at this time.
 LOS both vehicles.

HOU Roger.

This is Gemini Control 6 hours 45 minutes into the flight.

Gemini 11 has just passed out of range of the Rose Knot
tracking ship. The next station to acquire will be Tananarive
at 6 hours 57 minutes 13 seconds. This is Gemini Control.

END OF TAPE

Gemini Control Houston at 6 hours 57 minutes into the flight, into the Gemini 11 mission. We should be coming up over Tananarive momentarily. We are standing by for that pass now. The Gemini 11 is scheduled to start a meal during this particular pass or shortly thereafter. We have acquisition now so lets turn to the conversation from the air to ground.

TAN Roger, how is your docking practice, over.

S/C Say again this is Gemini 11.

TAN Roger, how is your docking practice, over.

S/C Oh it went just fine. Dick backed her up (garbled)

I guess and we're going to flight plan, TPI is four percent or so, 43 percent of fuel remaining.

TAN Roger, superb.

S/C Say again.

TAN That's great Pete.

S/C I'm getting a lot of noise and I can't hardly receive you.

TAN Roger. I just want to say that you guys really had a great day. It's wonderful.

S/C Thank you very much.

I wish to advise that we dumped the tape over CSQ and we've already eaten. So, if you'd like a crew status report now we can give it to you.

TAN Roger, as you desire. Over.

S/C Okay. We ate day 1 meal A, then meal C. Dick ate everything and I ate everything except the brownies.

TAN Roger.

S/C The watergun reads 617 and I'd say it was about
equally split between the two of us and it was 450
to start.

TAN Roger

I have a nodal update for you if you are ready
to copy. Over.

S/C Roger, we're ready to copy.

TAN Roger. Time is 10 hours 8 minutes and 56 seconds,
revolution 7, 21.1 degrees east, 1 hour 42 minutes
right ascension. Over.

S/C Roger. (garbled) point east, 8 minutes 56 seconds

TAN That is correct. Over.

This is Gemini Control Houston. Since we have a lull in our
conversation, we would like to comment about the earlier
conversation. As you perhaps heard, the Gemini 11 crew has
successfully completed docking practice just prior to this
pass and the crew is also advised by Cap Com John Young that
they have had a great day.

Gemini Control Houston, we now have LOS at Tananarive and
we're standing by now for our next pass which will be CSQ.
This should be at some 7 hours 20 minutes into the mission.
This is Gemini Control Houston.

END OF TAPE

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Gemini Control Houston at 8 hours and 3 minutes into the flight of Gemini 11. We will probably have no more conversation with the Gemini 11 crew, Pete Conrad and Dick Gordon this evening as they have just entered into their sleep period. The spacecraft is powered down and in drifting flight. At this time the Mauve team of flight controllers has come aboard into the Mission Control Center at Houston and is functioning at the consoles. The Mauve team of controllers will primarily serve during the 8-hour rest or sleep cycles of the flight to monitor the systems and the ^Ccondition of the crew. Although the Mauve team of flight controllers has no flight director as such, it is interesting to note that a man with a great deal of experience in the field of flight directing is currently in the Control Center and that is Mr. John Hodge. It is expected that Mr. Hodge will spend a considerable amount of time around the Mission Control Center this evening on this shift. At this time, we will play the tapes for you of the passes over the CSQ and Hawaii. Let's roll the tapes.

CSQ CSQ has TM solid. Both vehicles; both vehicles are go.

11, CSQ

S/C Go ahead, CSQ.

CSQ Roger. We are sending TX at this time

S/C Garbled.

CSQ I would like to have you turn your encoder off
so we can get a tape dump from the Agena.

S/C Roger, encoder is on off.

CSQ Roger, we are go here on the ground. We will
be standing by.

S/C Roger.

HOU CSQ Flight.

CSQ Go, Flight.

HOU How does it look?

CSQ Both vehicles are looking good. Both are go.
We are starting the Agena tape dump.

HOU Roger.
CSQ, Flight.

CSQ Go, Flight.

HOU Can we have an A summary please?

CSQ Which vehicle?

HOU Stand by. Gemini.

CSQ Roger.

HOU CSQ, Flight.

CSQ Go, Flight.

HOU You still have the crew awake now?

CSQ Say again?

HOU The crew are still awake?

CSQ That is affirmative.

HOU We are seeing something like an 8 to 10 amp
higher load than we expected in the power down
situation. You might have a word with them and

HOU see if they have got any clue. They might not
 have completely powered down yet. Would you
 check with them please?

CSQ Roger. 11, CSQ.

S/C Go ahead CSQ.

CSQ Okay, we show you are running a little bit
 high on your amperage. Have you completed
 all of your power down checklist?

S/C No, we haven't yet. We will in a few minutes.

CSQ Roger.

HOU I got that CSQ.

CSQ Roger.
 Gemini 11, CSQ. You can turn your encoder
 back on. We have completed the tape dump.

S/C Roger.

CSQ ...LOS, standing by.

S/C Roger.

HOU CSQ, Flight.

CSQ Go, Flight.

HOU Let me have another Gemini main, please?

CSQ Roger. This is CSQ we have LOS both vehicles.
 Both vehicles were go.

HOU Roger, CSQ.

Hawaii, Flight.

HAW Go ahead Flight, Hawaii.

HOU I guess we have a couple of other things for

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HOU you here, an ERT reset and a Gemini tape dump.

HAW Okay. Gemini 11, Hawaii.

Gemini 11, Hawaii, Cap Com.

S/C Roger Hawaii. This is 11. Go ahead.

HAW Roger. What is the position of your real-time
TM input?

S/C It is in the command position.

HAW Roger, how about putting it to real time in
Acq aid for me?

S/C Roger, real time in Acq.

HAW Would you go back to command?

S/C Back to command.

HAW Flight, Hawaii.

HOU Go ahead.

HAW I can't get any real time telemetry.

HOU No real time telemetry?

HAW That is affirmative, John.

HOU Let's try stand by.

HAW I just tried that, Flight.

HOU Stand by. Do you have Acq aid?

HAW That is negative, Flight.

We see the Acq beacon now, Flight.

Here comes telemetry.

HOU There you go.

HAW About 3 minutes late.

HOU I will have to think about that one. Okay
now Hawaii?

HAW It is an intermittent signal. It is coming in
and out.

HOU It is probably just antenna... then.

HAW Roger. 11 Hawaii.

S/C Go ahead.

HAW Okay, during your sleep period, well before
your sleep period, I would like you to pump
up that O₂ tank pressure to 765.

S/C Roger, 765.

HAW Right, and at the present decay rate that we
have got about 100 psi per hour, it will
probably go a little bit low during the sleep
period. So if either one of you two gentlemen
wakes up, you might pump it up during the night.

S/C Okay.

HOU Tell them not to go above 765.

HAW And don't go above 765.

S/C Roger.

HAW Gemini 11, Hawaii.

S/C Go ahead.

HAW Okay, would send a reset timer reset for us?
060.

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S/C Roger. Will send 060. It is reset.

HAW All right, thank you.

11, Hawaii, one minute until LOS, standing
by.

S/C Roger. We are going ahead and power down the
UHF now and thanks very much good night.

HAW And a good night to you. Hawaii has LOS
all parameters, all systems were go.

HOU Roger. Can we have an LOS main please?

HAW Roger. We did not receive a complete tape
dump due to the problem we had during the
early part of the pass on the signal. So
we commanded it off at 30 seconds prior to
LOS.

HOU Very good. Okay.

Gemini Control Houston at 8 hours 11 minutes into the flight
of the Gemini 11. We expect acquisition by RKV in one minute.
However, we plan no conversation over RKV since the crew has
entered their sleep period for the evening. The - it is perhaps
significant to note at this time, since the crew is now entered
their rest period, that this morning's rendezvous brings our
rendezvous tally sheet up to 8 rendezvous attempted in space
with 8 rendezvous successful. This will include the first
meeting in space, Gemini 7/6, then Gemini 8 with the first
docking, there were three rendezvous in Gemini 9 and Gemini 10

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with its dual rendezvous and today the swiftest rendezvous
todate, M=1 rendezvous of Gemini 11. So at 8 hours 12 minutes
into the flight this is Gemini Control.

END OF TAPE

Gemini Control Houston at 9 hours 7 minutes into the flight, into the Gemini 11 mission. The Gemini 11 spacecraft is now passing over the Pacific, the Western Pacific. It is some 8 minutes away or 8 minutes away from acquisition by Hawaii. It has made a pass over the CSQ. Because the crew is in their rest period, there was no conversation during this pass. The spacecraft is now in its 6th revolution. At this time in the Mission Control Center, we've had a rash of recent visitors. Astronaut Chief, Alan Shepard along with backup pilots Neal Armstrong and Bill Anders have arrived in their flight suits. Apparently just landing or landing only a short time ago from Cape Kennedy where they viewed the launch. Also aboard now is Mr. Charles Mathews who also was at Cape Kennedy for the launch and Al Bean the other Cap Com has joined John Young at the Cap Com console here in the Control Center. Otherwise, the Mission Control Center has a very quite atmosphere, it stands in considerable contrast with the Gemini X mission during the same time of day. You will recall Gemini X was an afternoon launch. The launch taking place at 4:20 p.m. c.s.t. and at this point and time during the Gemini X mission the Gemini X crew who was heavily involved in their - with their first rendezvous. In fact this evening in the Mission Control Center its much like an airplane cockpit when the autopilots on. Flight Controllers are quitely going over procedures and reviewing their days activities and of

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PAGE 2

course their monitoring systems aboard the Gemini 11
spacecraft. At 9 hours 10 minutes into the mission this
is Gemini Control.

END OF TAPE

Gemini Control Houston at 10 hours and seven minutes into the Gemini 11 Mission. The Gemini 11 spacecraft is now undergoing its seventh revolution. It is passing just inside the acquisition ring of Kano tracking. The Gemini 11 spacecraft is currently tracking an apogee of 166.5 nautical and a perigee of 157.5 nautical. Flight Surgeon John F. Zieglschmid advises that respiration and heart rates are coming down as crew members Pete Conrad and Dick Gordon unwind from what John Young described as a great day. Flight Surgeon says that the crew is currently relaxing and not yet fully asleep, however, they are nearing that state. Our propellant useage during today's very active flight plan came to - comes to - 416 pounds. This is quite a modest figure considering the amount of activity which was accomplished during the day. At 10 hours, nine minutes this is Gemini Control.

END OF TAPE

Gemini Control-Houston at 11 hours, 7 minutes into the flight of Gemini 11. Gemini 11 is presently passing over the mid-Pacific. It is now making a southerly track on its seventh revolution. We're about 15 minutes away now from acquisition by the Rose Knot off the east coast of South America. We expect no conversation, and there will be no conversation on this pass since the crew is some three hours into their rest period at this point in the mission. We've just been advised that the Gemini 11 crew, Pete Conrad and Dick Gordon, are probably dozing at this time. Their pulse rates and respiration rates have gone significantly down. Conrad is currently clocking a pulse rate of 69 beats per minute. Dick Gordon -- 72 beats per minute. Respiration rate for Conrad reads 12 per minute; for Gordon 13 per minute. And this gives us a rather clear indication that the crew is at least dozing at this point in the mission. During this quiet period, it's perhaps worthwhile to relate a sidebar conversation that took place in the Mission Control Center. This is actually the second time that Pete Conrad has been aboard a Gemini spacecraft as it made maneuvers toward rendezvous in space. The first was Gemini 5. In the case of Gemini 5, however, there was no real target -- only a point in space. It was a phantom rendezvous. It was programmed from the ground, and the exercise was stopped at what would be considered the terminal phase initiation in a real-life rendezvous. Today, of course, there was a real target -- Agena 11, and the rendezvous significantly was accomplished by onboard computations; and as Conrad and Dick Gordon are three hours into their rest period, they are docked and secured to that target. At 11 hours, 10 minutes into the flight of Gemini 11, this is Gemini Control.

END OF TAPE

Gemini Control - Houston at 12 hours and 7 minutes since liftoff of Gemini 11. The Gemini 11 spacecraft is now in its eighth revolution, and has just been acquired by Coastal Sentry. We do not have any conversation with the spacecraft on this particular pass because the crew is now four hours into their sleep period with some four hours to go in their sleep period. However, the Coastal Sentry is monitoring systems aboard the spacecraft; and all is well. The orbital parameters remain the same as reported earlier. That would be 166.5 nautical by 157.5 nautical. Meanwhile in the Mission Control Center, activity proceeds quietly and methodically in preparation for tomorrow's activities. At 12 hours, 9 minutes into the mission, this is Gemini Control.

END OF TAPE

Gemini Control - Houston at 13 hours and 7 minutes into the mission -- into the flight of Gemini 11. Gemini 11 is now passing out of the ring of acquisition of the Rose Knot at this time, and it is currently the judgement in Mission Control that the Gemini 11 crew is sleeping. Pulse rates on Command Pilot Pete Conrad indicate 66 beats per minute. On Pilot Dick Gordon -- 64 beats per minute. Respiration reads -- rates read 16 breaths per minute by Conrad, and 14 by Gordon. In discussions with Mission Director Bill Schneider, he advises that tomorrow's activities will hue to the nominal flight plan. Additionally, Mission Director Bill Schneider indicated that no decision to wipe off the windows during EVA -- during the extravehicular activity of Pilot Dick Gordon will be made until after the matter is discussed with the crew following their awakening in the morning. One change might be anticipated by preliminary estimates at this time, and that would be an EVA hatch opening time because of the later liftoff this morning -- it is currently calculated that hatch opening time will be at 24 hours, 2 minutes and 9 seconds into the mission, and some 115 minutes later that the ingress procedures will commence. At 13 hours, 10 minutes into the mission, this is Gemini Control.

END OF TAPE

Gemini Control - Houston at 14 hours and 7 minutes into the mission. Gemini 11 is now in its ninth revolution over the mid-Pacific passing far to the south of both Canton and Hawaii tracking stations. Next acquisition with the spacecraft will be over Canary. The spacecraft will pass over South America toward Canary. Acquisition at Canary will be at 14:46:45 or some 35 minutes from now. During this drifting flight phase of Gemini 11, our apogee and perigee has remained stable at 166.5 nautical apogee and 157.5 nautical perigee. We are now some six hours into the sleep cycle, and our current estimates based on data received so far are that both crew members can reasonably expect about four hours of sound sleep this first night in space. This, by the way, is a typical situation or a comparable situation, we should say, to previous Gemini missions; and is analogous, by the way, we might add to a traveler who is away from his home environment in a distant city for the first night. One point of clarification -- our 115 minute umbilical EVA time from hatch open to start ingress takes into account a five-minute rest period which should occur prior to the D-16 experiment -- this would be the minimum reaction power tool evaluation. At 14 hours, 9 minutes into the flight of Gemini 11, this is Gemini Control.

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 9/12/66, 11:50 PM, TAPE 85

PAGE 1

This is Gemini Control, Houston, 15 hours 7 minutes 39 seconds into the flight. Our present orbit is 157 by 166, we still have a sleeping crew. The Flight Surgeon says they have been - they have had solid sleep for about the last three hours. The present plan is to wake the crew about - in slightly less than one hour from now. At 16 hundred hours - at 16 hours elapsed time. This will give them only four of what the Flight Surgeon describes as deep sleep, but he also says this is fairly characteristic of first nights during this type of three day flight that we have been experiencing since the flight of Gemini 8. The Flight Director, Glen Lunney, is going around the room and has gotten a good status report from each of his consoles. He's concerned with all the onboard quantities, and he is being apprised of special backroom work that is going on. This is Gemini Control, Houston.

END OF TAPE

GEMINI XI MISSION COMMENTARY 9/13/66 12:50 AM TAPE 86 PAGE 1

This is Houston, 16 hours 7 minutes into the flight. The crew remains asleep. Our status is unchanged since our last report. This is Gemini Control Houston.

END OF TAPE

This is Gemini Houston. 16 Hours 22 minutes into the flight. At 12:55 A.M. CST communicator Alan Bean put in the first call to the crew today. "Pete" Conrad came up on the line and he reported the crew was "bright-eyed and bushy-tailed" in a voice that sounded neither "bright-eyed nor bushy-tailed". Very sleepy "Pete" Conrad but he indicated that they had been awake for some minutes and had already begun powering up the spacecraft for the days activities. The first thing they did was reset the Agena timer by sending a 060 command to the Agena. There was considerable discussion ensued about the problems existing that were noted during the first days activities in the Agena. They seemed to narrow down to the fact that the crew could not establish a solid radar lock. Particularly at close range. And also their MAP light or message acceptance pulse light, was somewhat erratic. Conrad said sometimes they got a MAP and sometimes they didn't, when they send commands. The ground crew at the various stations around the world is satisfied that all the commands that have gone into the Agena have been received properly and acted upon properly by the Agena. The problem seems to be in the return circuitry from the Agena back to the spacecraft. Indicating that the circuitry within the Agena is functioning properly. The crew is presently has completed their powering up of the electronic systems within the spacecraft and they are out over the east Atlantic preparing for fuel cell purge. They will be eating breakfast shortly. Meanwhile here is a tape conversation with the crew via Antiqua.

S/C One thousand one nine S Gemini

HOU Gemini 11, Houston

S/C (garbled) here. How are you?

HOU Just fine, how do you feel this morning?

S/C "Bright-eyed and bushy-tailed"

HOU Roger, good show. Get a quick shower and shave and get back to work.

S/C We were taking a little snooze just now. We've powered up waiting for the platform to come up.

HOU Roger. When you get the time send 060 which is reset timer reset to the Agena.

S/C Roger. zero six zero. And it's validated.

HOU Roger.

S/C I've got something for you test when you are ready to copy.

HOU We're ready, go ahead.

S/C I've been thinking about this L-band business and having no radar lock and it concerns me a little bit about our tether exercise. I don't know what you people have been thinking about on the ground but I think there should be some way before we up dock with the tether hooked up, that we can ascertain that we can control the Agena from the Gemini. Like maybe we better undock again one of these days and power up to radar and over a station and see if we really are getting commands

into it or not.

HOU Roger 11. We've been kicking that around down here also and we're going to give you some more information on it, probably ask you a few questions on revolution 13 as you pass over the states.

S/C Very well.

HOU 11 Houston. Our ground indications show that even though you're not getting any MAP lights there is every indication here that all your commands are getting into the Agena.

S/C We sometimes got a MAP and sometimes we didn't. The one suspension that we didn't get a MAP is that we never could...when we did have radar lock, we didn't get a MAP on sending the switch for antenna during radar and we tried both positions which we should have gotten a MAP on one of them. We should have gotten a MAP on both of them.

HOU Roger. "Pete" there's been a lot of question as to ^{exactly} how long you're holding the transmit switch in the transmit position.. waiting for a light when you're undocked.

S/C Would you say a couple of seconds?

HOU Roger, that's what we thought. We just wanted to verify it.

S/C Okay, but don't forget now while we were station keeping we never could get radar lock on. And I have implied that the lock on light still working. That's what got me confused because apparently we're getting MAPs in without the radar being locked on. Is that possible?

HOU Right now, 11, at least to the best of our indications down here on the ground we think your problem is in the return circuitry from the Agena to you, in both the MAP and the radar lock out light. So this is the one thing that would explain both the anomalies that you're seeing.

S/C Okay.

HOU But we'll be talking to you more about it when you come over the states in about an hour and a half.

S/C Okay.

HOU Gemini 11, Houston.

S/C Go ahead Houston.

HOU Roger, when you do come across the states then we're going to want to not only talk about the MAP lights and the lockout light, but we're going to try and get some sort of feel for the FDI problem you had at the same time and see if we can get some correlation between all those three anomalies.

S/C Okay. I can give you a little bit on that right now. It's just that the FDI started to wander off and pitch a yaw. We never broke lock and we tried to switch antennas and it wouldn't switch and it made our third solution bad.... garbled...

HOU 191 LOS Antigua .

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 9/13/66, 1:20 AM TAPE 88 PAGE 1

Gemini Control, Houston, 16 hours 37 minutes. During the Canary pass just completed, the crew undertook a fuel cell purge and that was the primary activity during the pass.

Here is the taped conversation of that event.

AFD Canary Cap Com, AFD.

CYI AFD, Canary. Okay, then you are awake. I guess about all you got is a purge and a Node update, cryo quantity.

AFD Roger.

HOU Canary, Houston Flight.

CYI Flight, Canary.

HOU Buck when he was leaving here, he was telling us a little more about the azimuth and elevation wandering. Did he notice during the terminal phase, we copied him to say that the FDI's wandered off in pitch and yaw. He commanded the other Agena antenna, and he says that it didn't do any good, by that I assume that he means the pitch and yaw continued to wander off. He started to tell us how that affected his closed loop solution and about all we copied here was that it made his third solution.- I presume that this midcourse made that solution bad. That is about as far as we copied. See if he wants to continue.

GEMINI 11 MISSION COMMENTARY, 9/13/66, 1:20 AM, TAPE 88 PAGE 2

CYI Okay, see if he wants to continue. We have a little bit of -- I will get the update information up to him and then talk him, okay?

HOU Okay.

CYI Okay, we have a G to TM solid to Canary. Gemini TM solid to Canary. Both vehicles are GO. We have C-band track. Gemini 11, Canary.

S/C Good morning, Canary. Gemini 11 here.

CYI How is it looking up there?

S/C Just fine.

CYI Okay, we are having a standby for TX here.

S/C Standing by.

CYI Okay, Gemini 11, we are still GO on the ground here. We have a Flight Plan update for you to copy during this pass, and we will start your fuel cell purge for you in just a second.

S/C Roger, we are ready to copy the Flight Plan update at this time and then the fuel cell.

CYI Okay, Title: Node at 16:10:00, REV 11, 71 degrees west, one hour 34 minutes, right Ascension. Title: Sierra 11 at 17:14:12, Sequence No. 02, Load No. - Alpha. That is the end of the Flight Plan.

S/C Roger.

CYI We are ready for your fuel cell purge,
section 1, list 2.

S/C Roger, stand by. Okay, we are starting
hydrogen on cell no. 1.

CYI Roger, understand.

HOU Canary, Flight.

CYI Go ahead, Flight.

HOU Send us a definite Gemini MAIN, please.

CYI Roger, this is Gemini MAIN.

S/C Okay, starting the hydrogen on no. 2.

CYI Roger.

S/C Okay, starting the oxygen on no. 1.

CYI Roger, understand.

S/C The hydrogen complete to one, slow into
no. 2.

CYI Flight, this is Canary. I don't think we
much of that information on the FDI. We
just may make it on the Cryo range.

HOU Okay.

S/C Okay, Canary, the fuel cell is complete.
The Platform should keep up on the line.

CYI Roger, would you place your Cryo switch to
O₂.

S/C Roger, O₂.

CYI Okay, Cryo switch H₂.

S/C Roger, H₂.

CYI Cryo switch OFF.

S/C Roger.

CYI Okay, we are less than a minute to our LOS
here, and still looking good from the ground.
Both vehicles are real good and I think they
will talk to you a little bit more on the
FDI later on, you were cut out over Antigua
at LOS. And we don't have enough time to
talk about it here.

S/C Okay, we are going to FC2 and aligning the
Platform.

CYI Roger, understand.

HOU Canary, Houston Flight.

CYI Go ahead, Flight.

HOU LOS, Bravo, Gemini.

CYI Roger. We have C-band LOS. Gemini LOS

END OF TAPE

This is Gemini Control Houston, 16 hours 52 minutes into the flight. We have had no additional contact with the Gemini 11 spacecraft since our last report over the Canaries. Power situation remains unchanged. A word or two might be said about the S-11 experiment that the crew will perform this morning, calls for sequence 02 and sequence 03, which is the airglow photography experiment of the northern and the southern hemisphere respectively. The airglow to be photographed is about a 15 mile thick layer which is primarily based about 60 miles above the earth. Some photographs taken on Gemini 9 indicate that there may be still another layer, slightly higher, between 90 to 150 miles. The photograph was-the airglow layer was first reported on by astronaut John Glenn. He saw it quite clearly although he was not forewarned to any extent on it's appearance or what to expect. Glenn described it as a haze layer lying above the terrestrial horizon, which is exactly what it looks like. Scott Carpenter made some very good estimates of it's visual brightness and the height of the layer above the horizon. Gordon Cooper in his Mercury 9 flight made some remarkable colored photos of the layer. It is the intent of the S-11 experiment to extend these earlier observations through filtered photographs and to look primarily at three wave lengths on this particular flight, 55 77 angstroms to record the green light of atomic oxygen, and 58 93 angstroms to record the yellow light of atomic sodium.

The filters of the camera to be used, are arranged so that the picture is split right down the center with a vertical dividing line. And the picture on one side of this line being recorded when the oxygen green light on the other side and the sodium yellow light. The new layer, which is expected to be found on the range of 6300 anstroms, will be recorded upon both sides of the line. The ultimate aim of the experiment is of course to achieve a better understanding of the earth's upper atmosphere. The relationship between the airglow and other phenomena in the upper atmosphere, is quite complicated but it is certain that the airglow layer is a very active region. It's influenced strongly by winds, by turbulence and by tidal motions of the regions immediately below. And at 16 hours 56 minutes into the flight, this is Gemini Control Houston.

END OF TAPE

This is Gemini Control Houston, 17 hours 7 minutes into the flight. During the Canarvon pass, which we are out of now, a few minutes ago listed the report on the crew status. Pete Conrad advised that both crew members had had a hearty breakfast of bacon squares and cinnamon toast. He also reported their water gun count now at 804 counts, about evenly divided between the two. He said each man had had about four hours of sound sleep last night. There is some conversation during the Canarvon pass regarding RCS, ration control systems thrusters, the temperatures of those thrusters. Conrad advised that they had had the RCS heaters on throughout the night. Apparent the temperatures on the area around the thrusters running a few degrees below normal. This is explained by the fact that the spacecraft is docked to the Agena, thereby shielding the thrusters from the direct rays of the sun. These are the kind of readings that we saw on the flight of Gemini 10. Roughly in the mid-50's as opposed to a configuration where they'd be exposed to the direct rays of the sun and the temperatures would be up in the high 50's or perhaps 60. Therefore, the RCS heaters remain on just to keep those temperatures in the mid-50 range. Here is the tape from Canarvon.

S/C Go ahead.

HOU Roger, we're go.

S/C Roger. Ready for the crew status report, okay.
Command pilot ate meal fourth day, meal A, and
he ate everything but three bacon cubes and 6

cinnamon toasts. The pilot, he ate the fourth day, meal A, all but 4 bacon squares and 2 cinnamon toasts.

CRO Roger

S/C (garbled)

CRO Didn't catch that. Please say again.

S/C 804

CRO Roger.

S/C Both crew members slept 4 hours

CRO Roger

S/C We have gyro compass to TDA south, and one member standing by to power down the Agena, and do our S-11 sequence 02.

CRO Roger, you copy flight?

HOU Affirmative

CRO We have transmitted PX.

S/C Canarvon, 11

CRO Go ahead

S/C Roger, about 8 hours into the flight, we had our RCS ring A light come on and we went to RCS. The heaters, we slept with them all night, and we've just been checking now, and we had the heaters on all night, but we show that we need
/RCS heat on both rings.

CRO Roger.

S/C Also, Canarvon, when we cycle the circuit

breakers. We can't see any power drop on our
amps.

CRO Roger.

HOU Canarvon from flight.

CRO Go ahead, flight.

HOU Those temperatures look alright to you, there?
RCS temperatures?

CRO We'll check on it.

HOU Canarvon, give us an Agena main.

CRO Roger

HOU Canarvon from flight .

CRO Go ahead

HOU You might tell them that the instrumentation
on the RCS temps looks good and it does also
indicate that he has to continue to work the
heater.

CRO Hello, Canarvon

S/C Go ahead

CRO Okay Pete, the instrumentation on the RCS looks
good and it appears that you will have to con-
tinue to play with the heaters.

S/C Okay, we'll just leave them on.

CRO Rog.

HOU And they're only a quarter of an amp, Canarvon.

CRO Say again?

HOU They're only .25 amps. That's probably why he's
not seeing it.

CRO Rog.

CRO Hello, Canarvon.

S/C Go ahead.

CRO The amps that you can draw will be about .25,
you probably couldn't see it.

S/C Okay.

CRO He's pumped the O2 tank pressure back up to
about (?)

S/C Okay.

CRO ll, Canarvon. We're coming up on LOS

S/C Roger

CRO Roger, Roger

HOU Canarvon, flight

CRO Go ahead

HOU Wouldn't be complete without an LOS main, would
we?

CRO (garbled) LOS on Gemini - LOS on Agena

END OF TAPE

GEMINI 11 MISSION COMMENTARY, 9/13/66, 2:05 AM TAPE 91 PAGE 1

This is Gemini Control, Houston, 17 hours 22 minutes into the flight. A word or two on cabin pressures and temperatures throughout the night - cabin pressure held at a very steady 5.05 pounds per square inch. The left suit, Conrad's suit, throughout the night ran between 48 and 49 degrees, that is in the suit at the temperature point. The right suit ran about a degree below that 47.9 at last reading as opposed to 48.7 degrees for Pete Conrad's suit. The cabin temperature, the overall temperature, meanwhile, has hung very steadily between 77 to 79 degrees throughout the night. The Flight Director, Lynn Lunney, in conversation with some of his backroom experts, has decided to recommend to the crew that Dick Gordon take with him a dry cloth during his EVA exercise to clean off the windows. Which primarily, Pete Conrad complained about earlier as being quite hazy, even dirty. Much more so than he said was the case during his Gemini 5 flight when some hazing was noted. There are several cloths approximately the size of wash cloths in the spacecraft. They are used for general mop-up - whatever is needed. They are dry cloths, and in this particular case, the cloth will be stowed and will be analyzed when they are back down on the ground. We have had no additional contact with the crew and it is 17 hours 24 minutes into the flight. This is Gemini Control, Houston.

END OF TAPE

This is Gemini control Houston 17 hours 37 minutes into the flight. We have had no contact since Canarvon. Over the states in this next pass which will occur about seven minutes from now. We'll pick it up actually through Grand Turk. Grand Turk will haul it up in to the Bermuda circle before it moves across the Atlantic. The crew will be performing the S-11 airglow photography experiment. The equipment includes a 70 mm general purpose Maurer camera, an F stop of 0.95. It's a fast lens to shorten the exposure time. The film magazine with a focal plane filters attached. The camera contains 12 feet of Eastman 103 D, as in dog, spectroscopic film. There are two filters one filter looking at 5500 angstroms on one side and the other side looking at 5893 angstroms. The second filter, this corrects some earlier information, the second filter will look at the 6300 angstroms region. Also during the stateside pass the.. both the ground and the crew will take a close look at the Agena clock to see if, in fact, the Agena clock is itself slipping slightly, losing a small amount of time, or if it lost some time earlier. There was some discussion about it late yesterday. Or whether the problem is in the telemetry coming off that particular circuit. A series of commands has been set up to look at this specific clock problem within the Agena.

This is Gemini control Houston.

END OF TAPE

This is Gemini Control, Houston, 17 hours 52 minutes into the flight of Gemini 11. The crew has been in conversation via our downrange Eastern Test Range station, and Pete Conrad has given quite an explicit explanation of the precise problems that they have encountered with the radar. He said he noted ^{some} / drift in the radar system beginning about an hour and 5 minutes into the flight. It was at that time that he stoped using certain values showing up on the radar when he could see that they were obviously false for the visual fix on the target vehicle. He points out well into the conversation that there is no problem about getting these message acceptance pulse or map lights back while in the docked configuration. Apparently it is only in the undocked that the system is somewhat erratic. The Flight Director still believes it is in the return circuitry from the Agena and apparently is an acceptable situation. Here is how the conversation goes as we moved across the Eastern Test Range.

Roger, we have been looking at your Agena since last night and there seems to be some sort of anomaly in the clock system. We don't know whether it is the clock itself, the accumulator that stores the impulses from the clock, or the TM readout that we get down from the Agena. We are planning that your next pass over Carnarvon to have you turn your encoder off, we will send up

some information to the Agena and then read it out on your pass over the States and try to establish if there is any problem at all with the Agena clock. Over.

S/C Houston, 11.

HOU Go ahead, 11.

S/C Test 11 is complete.

HOU Roger. Did you copy that information on that Agena clock test?

HOU Gemini 11, Houston.

S/C Go ahead.

HOU Roger, did you copy the information concerning this Agena clock test we are going to run over Carnarvon?

S/C Yes, we did.

HOU Roger. Have you got time to talk about this map problem now?

S/C Okay.

HOU Roger, what we would like to do, we have been analyzing the problem here on the ground - we'd like to send up our thoughts and get your concurrents or any comments that you have on it. First of all, we have been able to determine down here that the Agena seems to have responded to all the commands that you sent it. Even though you have not received any map, we have received the maps on the ground

when you sent the commands. Over.

S/C Okay.

HOU When the spacecraft had no indication of radar lock during your S26 docking radar, the encoders were locked on, as the L-bands were commanded and the maps were received. Even though you weren't receiving radar lock-on indications at that time, we indicated that you were locked and the L-band commands were being executed.

S/C Okay, now our radar analog display was not showing that we were locked on nor was the digital readout out of the computer showing that we were locked on. So our maps may have been getting in, but our radar was not reading correctly to us either.

HOU What was the light at this time, was it ON or OFF?

S/C The light was OFF.

HOU Roger.

S/C The lockon light was OFF and we received no map light. And then later, we would still have the lockon light OFF and we got a map when we got in real close.

HOU On these occasions was your radar locked on? At that time, were you getting range and range rate?

S/C No.

HOU At any time on your original rendezvous when you were attempting to switch the antenna, did you notice either an improvement or a degradation that lead you to believe that you were or were not actually switching antennas?

S/C Everything was going just fine and then the radar azimuth and elevation wandered off about 3 degrees indicating that the target was moving right and up, and I started to go after it and realized looking out the sight that it was not doing that. I did try to switch antennas right there and it never would switch and from that time on which was about 40 elapsed time into the rendezvous which would be about an hour and 5 minutes total, we never did have good radar azimuth and evaluation after that. The elevation came back in but the azimuth never did.

HOU Roger, and during this time, the range and range rate was good.

S/C Yes, it was good but it was doing quite a bit of wandering itself especially range rate analog.

HOU Roger, do you feel then that the map lights and the erroneous FDI indications are part of the same problem?

S/C No, we had not sent any commands to the Agena prior to this, and therefore, the first time we tried to send a command to the Agena was to change the antennas when we noticed the problem, and we never got a map light.

HOU Roger.

11, Houston, we are going to work with the information that you told us now but our first opinion is once again that all the commands you are sending are getting even though you don't seem to be able to get a map light onboard the spacecraft.

S/C Do you realize that while we are docked we are getting maps just fine. It is only while we are undocked .

HOU Roger, we understand.

S/C Houston, do you read?

HOU That's negative, 11. Say again.

S/C Roger, we are standing by to 18:00.

HOU Roger.

11, Houston, during your S-26 experiment are you saying that you could never get the radar to lockon. You could never get range or range rated information at that time?

S/C It locked on once about 20 feet from the

S/C vehicle and it never locked on again after
that.

HOU Roger.

S/C After that sometimes we got a map light and
most of the time we didn't . .

HOU Roger, we don't see any real problem that is
going to hurt either your tethering or any
other portion of the mission right now, but
we are continuing to work on it down here.

S/C Okay.

ANT LOS, Antigua

END OF TAPE

This is Gemini Control Houston 18 hours 7 minutes into the flight. In the recently completed pass across the Canary station "Pete" Conrad waxed nostalgically about the Canary area where he apparently worked at least one earlier mission.

This is how the conversation went.

HOU Canary Cap. com AFD

CYI AFD, Canary

HOU Okay, coming your way.

CYI Roger.

S/C Canary has cap com Agena.

CYI Roger, Canary

 Have S-band track, TM solid Gemini

 Both vehicles are go.

 We have C-band track

S/C Roger.

CYI Gemini 11, Canary, you need not answer. We

 show you as go on the ground. We'll be moni-

tori toring you...your experiment

S/C Roger, we're at 2 minutes and ten seconds. We'll

 be pitching up to $3\frac{1}{2}$ degrees per second in 5 minutes.

CYI Roger

S/C Flight, Canary, Bravo Alpha zero seven is reading

 689 on the cam.

CYI Say Again, the measurement number.

S/C Bravo Alpha zero seven. Cryo O tape measure.

CYI 68 got it.

HOU That's 6 8 9 flight.

S/C Want me to pump it up?

HOU Yes, have him pump it up.

CYI Okay.

S/C 11 to Canary.

HOU Go ahead Canary

CYI Okay, you want to turn on your O₂ tank heater?

S/C Okay,

CYI Okay, it looks like it has dropped down a little bit. Now I'm going to hit you with a TXer.

S/C Okay

CYI Canary to 11

Go ahead.

S/C Say hello to everyone down there for me, will you? Please.

CYI Sure will.

S/C Thank you.

CYI They all said to drop in and see them sometime.

S/C Oh, I'd sure like to come back.

Stand by, we're going to 3 $\frac{1}{2}$ degrees, in ten secs.

S/C Roger.

HOU Flight Canary

CYI Go ahead...

HOU Looks like he's turning his O₂ heater off Bravo Alpha zero 7 is reading 824 on the cam.

CYI Alright.

HOU And we would like an LOS main, please Canary.

CYI Roger.

Canary has LOS Gemini

END OF TAPE

Gemini Control Houston, 18 hours 22 minutes into the flight. Our status is unchanged since their last report. We have no additional tape. The spacecraft is now beginning it's sweep across the Indian Ocean. This is Gemini Control Houston.

END OF TAPE

This is Gemini Control Houston, 18 hours 37 minutes into the flight. During the night, the heart rates of the two crew men got down in the low 50's. This was during the period of solid sleep duration of about 4 hours. Since being awakened, they have each run about 75 beats per minute, and their respirations are running about 15 per minute. All in all, the flight surgeon is quite pleased with the crew status. He finds them alert and rested. He says that each man has consumed about 3 pounds of water, which is slightly above the planned amount. The flight surgeon is also quite pleased with the thoroughness of the crew status reports as they've been received. The crew is now in touch with Canarvon. Here is how that conversation is going.

HOU Canarvon from flight

CRO Go flight

HOU You all set for that load?

CRO Affirmed

HOU Okay, that's about all we have for you, Bill.

He'll be taking those sub-tank pictures.

CRO Rog.

CRO AFD, Canarvon

HOU Go ahead, Canarvon

CRO Roger, our S-band just went red. I don't think we will have it for this pass.

HOU Copy.

CRO Canarvon cap com, AFD

HOU Go ahead

CRO Canary sent a TX.

HOU Say again.

CRO I say, Canary sent a TX.

HOU Roger, we'll turn TM on it.

CRO Carnarvon has acquired contact.

HOU Roger Carnarvon

CRO Flight Carnarvon

HOU go

CRO Okay, the Agena is go, we still have a little trouble locking up on Gemini.

Hou Rog.

CRO Load the (garb) on Gemini

HOU Transmit a TX

CRO Roger

HOU Gemini is go

CRO Rog.

HOU Carnarvon from flight

CRO Go ahead flight

HOU He'll need to get encoder off and SPC enable after the load, Bill.

CRO Roger.

CRO ll, Carnarvon

S/C Go ahead, Carnarvon

CRO Roger. Last night, we had an Agena clock jump

about 4 hours and 30 minutes and we'd like to try to determine whether or not the problem is in fact in the Agena clock itself or in the telemetry system. So if we can, we check up a load of 16 command words and we'd like to have the first 8 or track all 16 be executed, over the states this next pass. The commands are pitch, yaw minus, pitch yaw plus, and pitch yaw low rate and pitch yaw high rate. This will probably slow them up on the time levels. We are to believe the preliminary clock or believe the spacecraft clock? Do you copy that?

S/C Okay, Bill, we were just in the middle of Apollo figure.

CRO Roger. Copy what I said?

S/C Yes, I copied it.

CRO Okay, turn your encoder on while we pass the load in.

S/C Okay, encoders going on.

CRO Okay. Transmit the load, flight.

CRO Hello, Carnarvon

S/C Go ahead

CRO Okay, we transmitted the load and we are compare.

S/C You've got a what?